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STREAMBANK TAILINGS AND REVEGETATION STUDIES

STARS Phase III

FINAL REPORT APPENDICES

Volume IV

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STREAMBANK TAILINGS AND REVEGETATION STUDIES PHASE III

VOLUME IV

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APPENDIX E

MODELING DATA

APPENDIX E1

SUMMARY OF CREAMS MODEL RUNS FOR ALL SITES

Table . **Summary of CREAMS model runs for the Ramsay Flats STARS site.**

RUN NUMBER	TREATMENT	HYDROLOGIC INPUT	SOIL INPUT	VEGETATION INPUT
OVERALL CREAMS MODEL DOMAIN - RAMSAY FLATS Area = (1,000 by 1,000 feet) 22.96 acres Watershed length to width ratio = 2:1 Average slope 1.5%, slope length 1,440 feet, slope steepens to 30% for last 30 feet Rill and sheet erosion only, no channel flow Mannings n of bare soil = 0.015 Soil Erodibility factor = 0.45 Mean monthly temperature and solar radiation measured on-site				
Run 1 - RF01	Control	Curve number = 92, Cover factor = 1.0, K_s = .071 in/hr	Soil Evaporation σ_s = 3.3 mm/day, Root zone depth 20 inches, 3 soil layers (loam, sandy loam, silty clay)	Sparse vegetation with rooting depth of 6 inches and peak LAI of .15, growing season julian from day 90 to 240
Run 2 - RF02	Deep-plow	Curve number = 78, Cover factor = 0.2, K_s = .071 in/hr	Soil Evaporation σ_s = 3.3 mm/day, Root zone depth 48 inches, 3 soil layers (loam, sandy loam, silty clay)	Healthy vegetation cover with rooting depth of 48 inches and peak LAI of 1.5, growing season from day 90 to 240
Run 3 - RF03	Control	Curve number = 92, Cover factor = 1.0, K_s = .071 in/hr	Soil Evaporation σ_s = 3.08 mm/day, Root zone depth 12 inches, 1 soil layer (loam)	Sparse vegetation with rooting depth of 6 inches and peak LAI of .15, growing season julian from day 70 to 270
Run 4 - RF04	Deep-plow	Curve number = 78, Cover factor = 0.2, K_s = .5 in/hr	Soil Evaporation σ_s = 3.08 mm/day, Root zone depth 60 inches, 3 soil layers (loam, sandy loam, silty clay)	Robust vegetation cover with rooting depth of 60 inches and peak LAI of 2.8, growing season from day 70 to 270
Run 5 - RF05	Deep-plow	Curve number = 78, Cover factor = 0.2, K_s = .5 in/hr	Soil Evaporation σ_s = 3.08 mm/day, Root zone depth 60 inches, 3 soil layers (loam, sandy loam, silty clay)	Robust vegetation cover with rooting depth of 60 inches and peak LAI of 2.8, growing season from day 120 to 270

Table . Summary of CREAMS model runs for the Rocker STARS site.

RUN NUMBER	TREATMENT	HYDROLOGIC INPUT	SOIL INPUT	VEGETATION INPUT
OVERALL CREAMS MODEL DOMAIN - ROCKER SITE Area = (1,000 by 1,000 feet) 22.96 acres Watershed length to width ratio = 2:1 Average slope 1.5%, slope length 1,440 feet, slope steepens to 30% for last 30 feet Rill and sheet erosion only, no channel flow Mannings n of bare soil = 0.015 Soil Erodibility factor = 0.06 Mean monthly temperature and solar radiation measured on-site				
Run 6 - RF06	Control	Curve number = 40, Cover factor = 1.0, K_s = .5 in/hr	Soil Evaporation α_s = 3.3 mm/day, Root zone depth 6 inches, 1 soil layer (loamy sand)	Sparse vegetation with rooting depth of 6 inches and peak LAI of .15, growing season julian from day 70 to 270
Run 7 - RF07	Deep-plow	Curve number = 40, Cover factor = 0.2, K_s = .5 in/hr	Soil Evaporation α_s = 3.3 mm/day, Root zone depth 36 inches, 2 soil layers (loamy sand, sandy loam)	Healthy vegetation cover with rooting depth of 36 inches and peak LAI of 1.5, growing season from day 70 to 270

Table . **Summary of CREAMS model runs for the Opportunity STARS site.**

RUN NUMBER	TREATMENT	HYDROLOGIC INPUT	SOIL INPUT	VEGETATION INPUT
OVERALL CREAMS MODEL DOMAIN - OPPORTUNITY SITE Area = (1,000 by 1,000 feet) 22.96 acres Watershed length to width ratio = 2:1 Average slope 1.5%, slope length 1,440 feet, slope steepens to 30% for last 30 feet Rill and sheet erosion only, no channel flow Mannings n of bare soil = 0.015 Soil Erodibility factor = 0.26 Mean monthly temperature and solar radiation measured on-site				
Run 8 - RF08	Control	Curve number = 94, Cover factor = 1.0, K_s = .142 in/hr	Soil Evaporation α_s = 3.3 mm/day, Root zone depth 6 inches, 1 soil layer (sandy loam)	Sparse vegetation with rooting depth of 6 inches and peak LAI of .15, growing season julian from day 70 to 270
Run 9 - RF09	Deep-plow	Curve number = 65, Cover factor = 0.2, K_s = .5 in/hr	Soil Evaporation α_s = 3.3 mm/day, Root zone depth 60 inches, 2 soil layers (mixed loam and sandy loam)	Healthy vegetation cover with rooting depth of 60 inches and peak LAI of 1.5, growing season from day 70 to 270

APPENDIX E2

RUN DATA

PRECIPITATION INPUT
DATA for GLEAMS RUNS

1989-ANAC	0.00	0.00	0.00	0.00	0.00	0.23	0.09	0.01	0.00	0.11			1
1989-ANAC	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00			2
1989-ANAC	0.00	0.54	0.22	0.02	0.00	0.00	0.00	0.00	0.00	0.00			3
1989-ANAC	0.05	0.21	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00			4
1989-ANAC	0.00	0.00	0.00	0.07	0.01	0.00	0.01	0.03	0.00	0.10			5
1989-ANAC	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.00	0.12	0.01			6
1989-ANAC	0.36	0.08	0.00	0.00	0.00	0.15	0.05	0.04	0.00	0.00			7
1989-ANAC	0.00	0.01	0.02	0.00	0.00	1.10	0.00	0.03	0.00	0.00			8
1989-ANAC	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.05	0.01	0.01	0.01		9
1989-ANAC	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.01			10
1989-ANAC	0.00	0.00	0.00	0.00	0.00	0.05	0.15	0.00	0.00	0.00			11
1989-ANAC	0.01	0.10	0.18	0.13	0.03	0.00	0.19	0.02	0.01	0.00			12
1989-ANAC	0.00	0.02	0.00	0.00	0.00	0.00	0.02	0.06	0.02	0.01			13
1989-ANAC	0.15	0.01	0.10	0.01	0.13	0.01	0.00	0.17	0.01	0.00			14
1989-ANAC	0.00	0.00	0.01	0.04	0.01	0.00	0.00	0.50	0.20	0.00			15
1989-ANAC	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00			16
1989-ANAC	0.17	0.00	0.00	0.00	0.00	0.25	0.31	0.01	0.00	0.00			17
1989-ANAC	0.09	0.00	0.00	0.00	0.03	0.00	0.00	0.03	0.00	0.00			18
1989-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			19
1989-ANAC	0.00	0.00	0.03	0.12	0.00	0.00	0.06	0.09	0.00	0.00			20
1989-ANAC	0.00	0.00	0.12	0.02	0.12	0.00	0.00	0.35	0.07	0.00			21
1989-ANAC	0.07	0.02	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.08			22
1989-ANAC	0.12	0.00	0.20	0.03	0.03	0.00	0.00	0.00	0.00	0.02			23
1989-ANAC	0.01	0.05	0.02	0.00	0.80	0.45	0.06	0.01	0.08	0.02			24
1989-ANAC	0.01	0.01	0.08	0.00	0.01	0.00	0.00	0.00	0.00	0.00			25
1989-ANAC	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.12			26
1989-ANAC	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			27
1989-ANAC	0.00	0.00	0.00	0.22	0.10	0.01	0.10	0.00	0.05	0.00			28
1989-ANAC	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.00	0.00			29
1989-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.06	0.01	0.02			30
1989-ANAC	0.06	0.00	0.00	0.17	0.00	0.00	0.02	0.01	0.02	0.00			31
1989-ANAC	0.01	0.01	0.00	0.00	0.00	0.00	0.02	0.04	0.03	0.00			32
1989-ANAC	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.20			33
1989-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03			34
1989-ANAC	0.00	0.00	0.01	0.08	0.00	0.00	0.01	0.02	0.06	0.04			35
1989-ANAC	0.11	0.01	0.01	0.01	0.36	0.00	0.00	0.00	0.00	0.00			36
1989-ANAC	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			37
1990-ANAC	0.00	0.02	0.00	0.00	0.01	0.00	0.02	0.09	0.00	0.10			1
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00			2
1990-ANAC	0.00	0.01	0.01	0.00	0.00	0.05	0.00	0.00	0.04	0.04			3
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00			4
1990-ANAC	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00			5
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00			6
1990-ANAC	0.00	0.00	0.02	0.18	0.00	0.00	0.00	0.00	0.00	0.11			7
1990-ANAC	0.00	0.00	0.00	0.01	0.00	0.04	0.00	0.00	0.14	0.02			8
1990-ANAC	0.00	0.38	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00			9
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			10
1990-ANAC	0.00	0.08	0.00	0.20	0.02	0.00	0.00	0.09	0.00	0.00			11
1990-ANAC	0.00	0.14	0.03	0.77	0.01	0.02	0.04	0.06	0.13	0.01			12
1990-ANAC	0.00	0.07	0.00	0.02	0.00	0.00	0.01	0.03	0.07	0.01			13
1990-ANAC	0.03	0.01	0.31	0.13	0.17	0.00	0.21	0.12	0.03	0.90			14
1990-ANAC	0.01	0.00	0.11	0.03	0.15	0.01	0.00	0.02	0.24	0.55			15
1990-ANAC	0.26	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.01	0.20			16
1990-ANAC	0.01	0.01	0.00	0.02	0.15	0.29	0.28	0.00	0.02	0.00			17
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.01	0.02	0.00			18
1990-ANAC	0.00	0.00	0.18	0.01	0.00	0.00	0.00	0.05	0.00	0.00			19
1990-ANAC	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00			20
1990-ANAC	0.01	0.00	0.00	0.00	0.02	0.00	0.28	0.01	0.01	0.00			21
1990-ANAC	0.02	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			22
1990-ANAC	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.08	0.35			23
1990-ANAC	0.24	0.11	0.03	0.07	0.12	0.02	0.35	0.11	0.06	0.00			24
1990-ANAC	0.00	0.00	0.01	0.00	0.00	0.01	0.07	0.09	0.00	0.00			25
1990-ANAC	0.20	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00			26
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.04			27
1990-ANAC	0.00	0.00	0.00	0.00	0.05	0.02	0.02	0.03	0.01	0.00			28
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00			29
1990-ANAC	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			30
1990-ANAC	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.07	0.24	0.02			31
1990-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.03	0.00			32
1990-ANAC	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.01			33
1990-ANAC	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00			34
1990-ANAC	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00			35

1990-ANAC	0.00	0.04	0.02	0.01	0.00	0.00	0.00	0.09	0.04	0.00		36
1990-ANAC	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00		37
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		1
1991-ANAC	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.06	0.00		2
1991-ANAC	0.00	0.00	0.00	0.10	0.01	0.00	0.00	0.04	0.00	0.00		3
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		4
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		5
1991-ANAC	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00		6
1991-ANAC	0.15	0.00	0.10	0.00	0.00	0.00	0.20	0.00	0.01	0.03		7
1991-ANAC	0.00	0.05	0.08	0.03	0.01	0.03	0.00	0.00	0.05	0.06		8
1991-ANAC	0.01	0.00	0.12	0.01	0.20	0.05	0.00	0.01	0.00	0.00		9
1991-ANAC	0.00	0.00	0.02	0.05	0.00	0.21	0.00	0.00	0.00	0.02		10
1991-ANAC	0.00	0.01	0.00	0.00	0.05	0.05	0.10	0.03	0.03	0.00		11
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.05	0.09		12
1991-ANAC	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.12	0.22	0.25		13
1991-ANAC	0.37	0.01	0.00	0.21	0.00	0.00	0.16	0.55	0.38	0.02		14
1991-ANAC	0.01	0.00	0.00	0.00	0.25	0.00	0.28	0.01	0.02	0.12		15
1991-ANAC	0.03	0.00	0.00	0.03	0.12	0.57	0.15	0.12	0.01	0.00		16
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		17
1991-ANAC	0.91	0.00	0.03	0.02	0.02	0.03	0.01	0.00	0.11	0.00		18
1991-ANAC	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		19
1991-ANAC	0.10	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00		20
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.22	0.12	0.00	0.00	0.00		21
1991-ANAC	0.00	0.00	0.29	0.02	0.00	0.00	0.00	0.06	0.00	0.00		22
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		23
1991-ANAC	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.28	0.61		24
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		25
1991-ANAC	0.24	0.03	0.00	0.84	0.00	0.01	0.19	0.00	0.00	0.00		26
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		27
1991-ANAC	0.00	0.11	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00		28
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06		29
1991-ANAC	0.01	0.00	0.00	0.00	0.12	0.00	0.00	0.01	0.18	0.28		30
1991-ANAC	0.06	0.01	0.00	0.24	0.12	0.00	0.00	0.00	0.18	0.14		31
1991-ANAC	0.00	0.00	0.09	0.00	0.00	0.04	0.06	0.00	0.00	0.00		32
1991-ANAC	0.00	0.07	0.04	0.12	0.09	0.01	0.00	0.01	0.00	0.09		33
1991-ANAC	0.67	0.07	0.21	0.00	0.01	0.18	0.00	0.00	0.00	0.05		34
1991-ANAC	0.16	0.01	0.00	0.01	0.00	0.05	0.06	0.00	0.00	0.00		35
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		36
1991-ANAC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		37

RAMSAY FLATS

GLEAMS HYDROLOGY
PARAMETER FILES

RF01
RF02
RF03
RF04
RF05

```
SILVER BOW CREEK
RAMSAY FLATS CONTROL PLOT SIMULATION
1989-1991
   89001       1       0       0       0       0       0       0       1
0
      50

   22.96    .071     .85     3.3      92    .015     2.0    20.0
       0       3     6.0    18.0    20.0
    0.40    0.43    0.43
    0.35    0.32    0.40
    0.22    0.12    0.30
    .283    .709    .071
      .5      .5     2.0
    20.0    15.0    40.0
    50.0    40.0    50.0
    38.0    27.0    44.0    57.0    63.0    75.0    85.0    75.0    71.0    57.0
    47.0    36.0
    16.0     3.0    21.0    29.0    35.0    44.0    49.0    45.0    38.0    31.0
    26.0    15.0
   150.0   230.0   320.0   370.0   430.0   500.0   640.0   520.0   380.0   270.0
   140.0   130.0
      89      91       3
      79    1090    1366             6.0       1      90     240

      79    2090    2366             6.0       1      90     240

      79    3090    3366             6.0       1      90     240

       0
      79      10
     0.0      .0
     .05      .3
      .1     .06
     .15     .09
      .2     .12
     .25     .15
     .75     .15
      .8      .1
      .9     .05
     1.0     0.0
       0       0
       0       0
      -1       0
```

```
SILVER BOW CREEK
RAMSAY FLATS DEEP-TILL SIMULATION
1989-1991
   89001        1        0        0        0        0        0        0        1
0
      50

   22.96     .071      .85      3.3       78     .015      1.0     48.0
       0        4      6.0     18.0     42.0     48.0
    0.40     0.43     0.43     0.40
    0.35     0.32     0.40     0.19
    0.22     0.12     0.30     0.05
    .283     .709     .071     .709
      .5       .5      2.0      .01
    20.0     15.0     40.0      5.0
    50.0     40.0     50.0     30.0
    38.0     27.0     44.0     57.0     63.0     75.0     85.0     75.0     71.0     57.0
    47.0     36.0
    16.0      3.0     21.0     29.0     35.0     44.0     49.0     45.0     38.0     31.0
    26.0     15.0
   150.0    230.0    320.0    370.0    430.0    500.0    640.0    520.0    380.0    270.0
   140.0    130.0
      89       91        3
      79     1090     1366                        1       90      240

      79     2090     2366                        1       90      240

      79     3090     3366                        1       90      240

       0
      79       10
     0.0     00.0
     .05       .3
      .1       .6
     .15       .9
      .2      1.2
     .25      1.5
     .75     1.25
      .8      1.0
      .9       .5
     1.0      0.0
       0        0
       0        0
      -1        0
```

```
SILVER BOW CREEK
RAMSAY FLATS CONTROL PLOT SIMULATION
1989-1991 (SHALLOW, LOW SOIL EVAP)
   89001       1       0       0       0       0       0       0       1
0
      50

   22.96    .071     .85    3.08      92    .015     1.0    12.0
       0       1    12.0
    0.60
    0.48
    0.30
    .283
      .5
    25.0
    40.0
    38.0    27.0    44.0    57.0    63.0    75.0    85.0    75.0    71.0    57.0
    47.0    36.0
    16.0     3.0    21.0    29.0    35.0    44.0    49.0    45.0    38.0    31.0
    26.0    15.0
   150.0   230.0   320.0   370.0   430.0   500.0   640.0   520.0   380.0   270.0
   140.0   130.0
      89      91       3
      79    1070    1366             6.0       1      70     270

      79    2070    2366             6.0       1      70     270

      79    3070    3366             6.0       1      70     270

       0
      79       7
     0.0      .0
      .1     .05
      .2      .1
      .7      .1
      .8     .15
      .9     .08
     1.0     0.0
       0       0
       0       0
      -1       0
```

```
SILVER BOW CREEK
RAMSAY FLATS DEEP-TILL SIMULATION
1989-1991 (INCREASED LAI, LOW SOIL EVAP)
   89001        1        0        0        0        0        0        0        1
0
      50

   22.96       .5      .85     3.08       78     .015      2.0     60.0
       0        3     24.0     36.0     60.0
      .6      0.6      0.6
    0.45      0.4      .45
      .3      0.3      .35
    1.42     1.42     .709
      .5       .5      2.0
    20.0     15.0     45.0
    35.0     35.0     40.0
    38.0     27.0     44.0     57.0     63.0     75.0     85.0     75.0     71.0     57.0
    47.0     36.0
    16.0      3.0     21.0     29.0     35.0     44.0     49.0     45.0     38.0     31.0
    26.0     15.0
   150.0    230.0    320.0    370.0    430.0    500.0    640.0    520.0    380.0    270.0
   140.0    130.0
      89       91        3
      79     1070     1366             60.0        1       70      270

      79     2070     2366             60.0        1       70      270

      79     3070     3366             60.0        1       70      270

       0
      79        7
     0.0     00.0
      .1      2.0
      .2      2.8
      .7      2.8
      .8      1.8
      .9       .9
     1.0      0.0
       0        0
       0        0
      -1        0
```

```
SILVER BOW CREEK
RAMSAY FLATS DEEP-TILL SIMULATION
1989-1991 (INCREASED LAI, LOW SOIL EVAP, DELAYED GROWTH)
   89001        1        0        0        0        0        0        0        1
0
       50

    22.96       .5      .85     3.08       78     .015      2.0     60.0
        0        3     24.0     36.0     60.0
       .6      0.6      0.6
     0.45      0.4      .45
       .3      0.3      .35
     1.42     1.42     .709
       .5       .5      2.0
     20.0     15.0     45.0
     35.0     35.0     40.0
     38.0     27.0     44.0     57.0     63.0     75.0     85.0     75.0     71.0     57.0
     47.0     36.0
     16.0      3.0     21.0     29.0     35.0     44.0     49.0     45.0     38.0     31.0
     26.0     15.0
    150.0    230.0    320.0    370.0    430.0    500.0    640.0    520.0    380.0    270.0
    140.0    130.0
       89       91        3
       79     1070     1366             60.0        1      120      270

       79     2070     2366             60.0        1      120      270

       79     3070     3366             60.0        1      120      270


        0
       79        7
      0.0     00.0
       .1      2.0
       .2      2.8
       .7      2.8
       .8      1.8
       .9       .9
      1.0      0.0
        0        0
        0        0
       -1        0
```

RAMSAY FLATS

GLEAMS EROSION
PARAMETER FILES

RF01
RF02
RF03
RF04
RF05

```
SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991
      89       91        2        1        0
   100.0
       2    22.96
  1400.0     .015  1450.0      .3
       1      1.0     .45
       3
     001
       1
       1
       1     1.0
     1.0
     1.0
    .015
     1.0
     1.0
    .015
     1.0
     1.0
    .015
```

```
SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991
      89       91        2        1        0
   100.0
       2    22.96
  1400.0     .015  1450.0      .3
       1      1.0     .45
       3
     001
       1
       1
       1     1.0
      .2
     1.0
    .015
      .2
     1.0
    .015
      .2
     1.0
    .015
```

```
SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (SHALLOW, LOW LAI)
      89        91         2         1         0
   100.0
       2    22.96
  1400.0      .015   1450.0       .3
       1       1.0      .45
       3
     001
       1
       1
       1      1.0
     1.0
     1.0
    .015
     1.0
     1.0
    .015
     1.0
     1.0
    .015
```

```
SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (LOW LAI, LOW SOIL EVAP)
      89       91        2        1        0
   100.0
       2   22.96
  1400.0     .015  1450.0      .3
       1      1.0     .45
       3
     001
       1
       1
       1     1.0
      .2
     1.0
    .015
      .2
     1.0
    .015
      .2
     1.0
    .015
```

```
SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (LOW LAI, LOW SOIL EVAP)
      89       91        2        1        0
   100.0
       2   22.96
  1400.0     .015  1450.0      .3
       1     1.0     .45
       3
     001
       1
       1
       1     1.0
      .2
     1.0
    .015
      .2
     1.0
    .015
      .2
     1.0
    .015
```

GLEAMS HYDROLOGY/EROSION OUTPUT

RF01

HYDROLOGY INPUT PARAMETER FILENAME: rf01.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
RAMSAY FLATS CONTROL PLOT SIMULATION
1989-1991

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	90	.00
0	1	103	.30
0	1	117	.06
0	1	131	.09
0	1	145	.12
0	1	159	.15
0	1	297	.15
0	1	310	.10
0	1	338	.05
0	1	366	.00
0	2	90	.00
0	2	103	.30
0	2	117	.06
0	2	131	.09
0	2	145	.12
0	2	159	.15
0	2	297	.15
0	2	310	.10
0	2	338	.05
0	2	366	.00
0	3	90	.00
0	3	103	.30
0	3	117	.06
0	3	131	.09
0	3	145	.12
0	3	159	.15
0	3	297	.15
0	3	310	.10
0	3	338	.05
0	3	366	.00

FIELD AREA	=	22.960 ACRES
ROOTING DEPTH	=	20.000 IN
SATURATED CONDUCTIVITY	=	.071 IN/HR
AVG. FUL	=	.681
AVG. FIELD CAPACITY	=	.337 IN/IN
INITIAL STORAGE FRACTION	=	.850
EVAPORATION COEFFICIENT	=	3.300
AVERAGE POROSITY	=	.421 CC/CC
SCS CURVE NUMBER	=	92.000
CHANNEL SLOPE	=	.015 FT/FT
WATERSHED LEN/WIDTH RATIO	=	2.000
PEAK FLOW RATE COEFFICIENT	=	34.276

PEAK FLOW RATE EXPONENT = .868
UPPER LIMIT OF STORAGE = 5.060 IN
AVG. 15-BAR WATER CONTENT = .168 IN/IN
INITIAL SOIL WATER STORAGE = 2.873 IN
FRAC. P.A.W. TO BEGIN IRR. = .000
FRAC. P.A.W. TO END IRR. = .000

UPPER LIMIT OF STORAGES, IN

.071	.505	.505	1.860	1.860	.260

INITIAL PLANT AVAILABLE STORAGE, IN

.044	.310	.310	1.020	1.020	.170

POROSITY BY LAYER (CC/CC)

.400	.400	.400	.430	.430	.430

FUL BY LAYER (IN/IN)

.722	.722	.722	.645	.645	.769

FEILD CAPACITY BY LAYER (IN/IN)

.350	.350	.350	.320	.320	.400

FIELD CAPACITY BY LAYER (IN)

.138	.981	.981	1.920	1.920	.800

15-BAR WATER CONTENT BY LAYER (IN/IN)

.220	.220	.220	.120	.120	.300

WATER CONTENT AT WILT. PT. BY LAYER (IN)

.087	.617	.617	.720	.720	.600

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.28	.00	.00	1.16	1.82	1.16	1.82	.00	1.16		
89084	.05	.00	.00	32.55	.26	.00	.00	1.20	1.86	1.20	1.86	.00	1.20		
89085	.17	.04	.00	32.87	.26	.00	.00	1.24	1.90	1.24	1.90	.00	1.24		
89086	.12	.02	.00	33.19	.26	.00	.00	1.32	1.98	1.32	1.98	.00	1.32		
89087	.20	.06	.00	33.51	.26	.00	.00	1.39	2.06	1.39	2.06	.00	1.39		
89088	.19	.06	.00	33.84	.27	.00	.00	1.48	2.14	1.48	2.14	.00	1.48		
89089	.23	.08	.00	34.17	.27	.00	.00	1.56	2.22	1.56	2.22	.00	1.56		
89090	.26	.11	.00	34.50	.27	.00	.00	1.64	2.30	1.64	2.30	.00	1.64		
89091	.28	.13	.00	34.83	.28	.00	.00	1.73	2.39	1.73	2.39	.00	1.73		
89092	.37	.20	.00	35.17	.28	.00	.00	1.81	2.47	1.81	2.48	.00	1.81		
89093	.36	.20	.00	35.51	.28	.00	.00	1.90	2.56	1.90	2.57	.00	1.90		
89094	.38	.23	.00	35.85	.29	.01	.01	1.99	2.65	2.00	2.66	.00	2.00		
89095	.42	.26	.00	36.19	.29	.01	.01	2.08	2.74	2.09	2.75	.00	2.09		
89096	.45	.30	.00	36.54	.29	.02	.02	2.17	2.84	2.19	2.85	.00	2.19		
89097	.49	.34	.00	36.88	.30	.02	.02	2.23	2.93	2.25	2.95	.00	2.25		
89098	.05	.00	.00	37.23	.29	.03	.03	2.33	3.03	2.36	3.05	.00	2.36		
89099	.05	.00	.00	37.58	.29	.04	.04	2.42	3.12	2.46	3.16	.00	2.46		
89100	.01	.00	.00	37.93	.29	.04	.04	2.48	3.22	2.53	3.27	.00	2.53		
89106	.05	.00	.00	39.17	.28	.11	.11	2.68	3.85	2.78	3.96	.00	2.78		
89107	.15	.00	.00	40.43	.28	.12	.12	2.79	3.96	2.91	4.08	.00	2.91		
89111	.01	.00	.00	41.33	.28	.15	.15	2.89	4.42	3.04	4.57	.00	3.04		
89112	.10	.00	.00	42.23	.27	.16	.16	2.97	4.54	3.13	4.70	.00	3.13		
89113	.18	.00	.00	42.59	.28	.16	.16	3.10	4.66	3.26	4.82	.00	3.26		
89114	.13	.00	.00	42.96	.28	.17	.17	3.20	4.78	3.37	4.95	.00	3.37		
89115	.03	.00	.00	43.32	.28	.17	.17	3.26	4.91	3.43	5.08	.00	3.43		
89117	.19	.00	.00	43.86	.28	.18	.18	3.41	5.16	3.59	5.34	.00	3.59		
89118	.02	.00	.00	44.40	.28	.18	.18	3.46	5.29	3.64	5.47	.00	3.64		
89119	.01	.00	.00	44.76	.27	.18	.18	3.50	5.43	3.68	5.61	.00	3.68		
89122	.02	.00	.00	45.48	.27	.19	.19	3.58	5.83	3.78	6.03	.00	3.78		
89127	.02	.00	.00	46.91	.27	.21	.21	3.70	6.55	3.91	6.76	.00	3.91		
89128	.06	.00	.00	47.97	.27	.22	.22	3.74	6.69	3.96	6.91	.00	3.96		
89129	.02	.00	.00	48.32	.26	.22	.22	3.78	6.84	4.00	7.07	.00	4.00		
89130	.01	.00	.00	48.67	.26	.23	.23	3.81	6.99	4.04	7.22	.00	4.04		
89131	.15	.00	.00	49.02	.26	.23	.23	3.93	7.15	4.16	7.38	.00	4.16		
89132	.01	.00	.00	49.36	.26	.24	.24	3.95	7.30	4.19	7.54	.00	4.19		

89133	.10	.00	.00	49.70	.26	.24	.24	4.03	7.46	4.28	7.70	.00	4.28
89134	.01	.00	.00	50.04	.26	.25	.25	4.06	7.62	4.31	7.87	.00	4.31
89135	.13	.00	.00	50.38	.26	.26	.26	4.17	7.78	4.42	8.03	.00	4.42
89136	.01	.00	.00	50.72	.26	.26	.26	4.19	7.94	4.45	8.20	.00	4.45
89138	.17	.00	.00	51.22	.26	.27	.27	4.35	8.27	4.62	8.54	.00	4.62
89139	.01	.00	.00	51.72	.26	.28	.28	4.37	8.43	4.65	8.71	.00	4.65
89143	.01	.00	.00	52.53	.26	.31	.31	4.45	9.11	4.76	9.42	.00	4.76
89144	.04	.00	.00	53.32	.26	.32	.32	4.48	9.29	4.80	9.61	.00	4.80
89145	.01	.00	.00	53.63	.26	.32	.32	4.50	9.46	4.83	9.79	.00	4.83
89148	.50	.00	.00	54.25	.26	.35	.35	4.71	10.00	5.06	10.35	.00	5.06
89149	.20	.00	.00	54.85	.27	.36	.36	4.87	10.18	5.23	10.54	.00	5.23
89153	.01	.00	.00	55.58	.27	.39	.39	5.00	10.92	5.39	11.32	.00	5.39
89154	.02	.00	.00	56.29	.26	.40	.40	5.04	11.11	5.45	11.52	.00	5.45
89161	.17	.00	.00	57.36	.26	.48	.48	5.29	12.47	5.77	12.94	.00	5.77
89166	.25	.00	.00	58.85	.25	.53	.53	5.56	13.47	6.10	14.00	.00	6.10
89167	.31	.00	.00	59.54	.26	.54	.54	5.77	13.67	6.31	14.21	.00	6.31
89168	.01	.00	.00	59.76	.25	.56	.56	5.80	13.87	6.35	14.43	.00	6.35
89171	.09	.00	.00	60.17	.25	.59	.59	5.91	14.49	6.50	15.08	.00	6.50
89175	.03	.00	.00	60.86	.25	.64	.64	5.99	15.32	6.63	15.96	.00	6.63
89178	.03	.00	.00	61.48	.24	.67	.67	6.05	15.95	6.72	16.62	.00	6.72
89193	.03	.00	.00	62.71	.23	.85	.85	6.27	19.15	7.12	20.00	.00	7.12
89194	.12	.00	.00	63.50	.22	.86	.86	6.37	19.36	7.23	20.22	.00	7.23
89197	.06	.00	.00	63.62	.22	.90	.90	6.44	20.00	7.34	20.90	.00	7.34
89198	.09	.00	.00	63.73	.22	.91	.91	6.51	20.22	7.42	21.12	.00	7.42
89203	.12	.00	.00	63.82	.22	.97	.97	6.66	21.28	7.63	22.24	.00	7.63
89204	.02	.00	.00	63.88	.22	.98	.98	6.68	21.49	7.65	22.46	.00	7.65
89205	.12	.00	.00	63.88	.22	.99	.99	6.77	21.70	7.76	22.69	.00	7.76
89208	.35	.00	.00	63.87	.22	1.03	1.03	7.01	22.32	8.03	23.35	.00	8.03
89209	.07	.00	.00	63.83	.22	1.04	1.04	7.06	22.53	8.10	23.57	.00	8.10
89211	.07	.00	.00	63.79	.22	1.06	1.06	7.13	22.94	8.19	24.00	.00	8.19
89212	.02	.00	.00	63.73	.22	1.07	1.07	7.15	23.15	8.22	24.22	.00	8.22
89213	.10	.00	.00	63.68	.22	1.08	1.08	7.23	23.35	8.31	24.44	.00	8.31
89220	.08	.00	.00	63.42	.22	1.16	1.16	7.39	24.76	8.55	25.92	.00	8.55
89221	.12	.00	.00	63.09	.21	1.17	1.17	7.48	24.96	8.65	26.13	.00	8.65
89223	.20	.00	.00	62.94	.21	1.19	1.19	7.66	25.35	8.85	26.54	.00	8.85
89224	.03	.00	.00	62.77	.21	1.20	1.20	7.68	25.54	8.88	26.75	.00	8.88
89225	.03	.00	.00	62.65	.21	1.21	1.21	7.70	25.74	8.92	26.95	.00	8.92
89230	.02	.00	.00	62.26	.21	1.27	1.27	7.78	26.68	9.05	27.95	.00	9.05
89231	.01	.00	.00	61.82	.21	1.28	1.28	7.81	26.86	9.08	28.14	.00	9.08
89232	.05	.00	.00	61.66	.21	1.29	1.29	7.85	27.05	9.13	28.34	.00	9.13
89233	.02	.00	.00	61.50	.21	1.30	1.30	7.86	27.23	9.16	28.53	.00	9.16
89235	.80	.06	.00	61.24	.22	1.31	1.32	8.05	27.59	9.36	28.91	.00	9.36
89236	.45	.03	.00	60.97	.25	1.32	1.33	8.22	27.77	9.55	29.10	.00	9.55
89237	.06	.00	.00	60.79	.24	1.33	1.34	8.37	27.94	9.70	29.28	.00	9.70
89238	.01	.00	.00	60.59	.24	1.34	1.35	8.47	28.12	9.81	29.47	.00	9.81
89239	.08	.00	.00	60.40	.24	1.35	1.36	8.53	28.29	9.89	29.65	.00	9.89
89240	.02	.00	.00	60.20	.23	1.36	1.37	8.61	28.46	9.97	29.83	.00	9.97
89241	.01	.00	.00	59.99	.23	1.36	1.37	8.66	28.63	10.02	30.00	.00	10.02
89242	.01	.00	.00	59.78	.23	1.36	1.37	8.71	28.80	10.07	30.17	.00	10.07
89243	.08	.00	.00	59.56	.23	1.36	1.37	8.77	28.97	10.13	30.34	.00	10.13
89245	.01	.00	.00	59.22	.23	1.36	1.37	8.84	29.30	10.21	30.66	.00	10.21
89252	.03	.00	.00	58.15	.22	1.36	1.37	9.00	30.40	10.37	31.76	.00	10.37
89253	.02	.00	.00	57.13	.22	1.36	1.37	9.04	30.55	10.41	31.91	.00	10.41
89260	.12	.00	.00	56.03	.22	1.36	1.37	9.24	31.55	10.60	32.91	.00	10.60
89262	.12	.00	.00	54.73	.22	1.36	1.37	9.35	31.82	10.71	33.18	.00	10.71
89274	.22	.00	.00	52.54	.21	1.36	1.37	9.62	33.29	10.98	34.65	.00	10.98
89275	.10	.00	.00	50.42	.21	1.36	1.37	9.70	33.40	11.06	34.76	.00	11.06
89276	.01	.00	.00	50.08	.21	1.36	1.37	9.72	33.51	11.09	34.87	.00	11.09
89277	.10	.00	.00	49.74	.22	1.36	1.37	9.80	33.61	11.17	34.98	.00	11.17
89279	.05	.00	.00	49.22	.21	1.36	1.37	9.86	33.82	11.22	35.19	.00	11.22
89284	.02	.00	.00	48.00	.21	1.36	1.37	9.93	34.32	11.30	35.68	.00	11.30
89285	.02	.00	.00	46.95	.21	1.36	1.37	9.95	34.41	11.31	35.78	.00	11.31
89297	.02	.00	.00	44.61	.21	1.36	1.37	10.10	35.41	11.47	36.78	.00	11.47
89298	.06	.00	.00	42.27	.21	1.36	1.37	10.15	35.48	11.52	36.85	.00	11.52
89299	.01	.00	.00	41.90	.21	1.36	1.37	10.17	35.56	11.54	36.92	.00	11.54
89300	.02	.00	.00	41.54	.21	1.36	1.37	10.19	35.63	11.55	36.99	.00	11.55
89301	.06	.00	.00	41.18	.21	1.36	1.37	10.24	35.70	11.60	37.06	.00	11.60
89304	.17	.00	.00	40.46	.21	1.36	1.37	10.33	35.90	11.69	37.26	.00	11.69
89307	.02	.00	.00	39.39	.21	1.36	1.37	10.37	36.08	11.73	37.45	.00	11.73
89308	.01	.00	.00	38.67	.21	1.36	1.37	10.39	36.14	11.75	37.51	.00	11.75
89309	.02	.00	.00	38.32	.21	1.36	1.37	10.41	36.20	11.77	37.57	.00	11.77
89311	.01	.00	.00	37.79	.21	1.36	1.37	10.44	36.32	11.80	37.68	.00	11.80

89312	.01	.00	.00	37.26	.21	1.36	1.37	10.46	36.37	11.83	37.74	.00	11.83
89317	.02	.00	.00	36.23	.21	1.36	1.37	10.53	36.63	11.89	38.00	.00	11.89
89318	.04	.00	.00	35.20	.21	1.36	1.37	10.56	36.68	11.92	38.05	.00	11.92
89319	.03	.00	.00	34.86	.21	1.36	1.37	10.58	36.73	11.95	38.10	.00	11.95
89321	.01	.00	.00	34.36	.20	1.36	1.37	10.61	36.82	11.98	38.19	.00	11.98

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	2.124 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	1.363 IN
ACTUAL SOIL EVAP	=	11.005 IN
TOTAL ET	=	12.369 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.369 IN
BEGIN SOIL WATER	=	2.873 IN
FINAL SOIL WATER	=	.340 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.18	.00	.00	.38	3.27	.38	3.27	.00	.38		
90084	.05	.00	.00	32.55	.17	.00	.00	.43	3.34	.43	3.34	.00	.43		
90085	.09	.01	.00	32.87	.17	.00	.00	.49	3.42	.49	3.42	.00	.49		
90086	.12	.02	.00	33.19	.17	.00	.00	.57	3.50	.57	3.50	.00	.57		
90087	.15	.03	.00	33.51	.17	.00	.00	.64	3.58	.64	3.58	.00	.64		
90088	.18	.05	.00	33.84	.18	.00	.00	.72	3.66	.72	3.66	.00	.72		
90089	.22	.07	.00	34.17	.18	.00	.00	.81	3.74	.81	3.74	.00	.81		
90090	.25	.09	.00	34.50	.18	.00	.00	.89	3.82	.89	3.82	.00	.89		
90091	.28	.11	.00	34.83	.19	.00	.00	.98	3.91	.98	3.91	.00	.98		
90092	.32	.14	.00	35.17	.19	.00	.00	1.06	3.99	1.06	3.99	.00	1.06		
90093	.35	.18	.00	35.51	.20	.00	.00	1.15	4.08	1.15	4.08	.00	1.15		
90094	.32	.16	.00	35.85	.20	.00	.01	1.24	4.17	1.24	4.18	.00	1.24		
90102	.08	.00	.00	37.41	.20	.04	.06	1.36	4.94	1.40	5.00	.00	1.40		
90104	.20	.00	.00	39.17	.20	.06	.08	1.47	5.15	1.53	5.23	.00	1.53		
90105	.02	.00	.00	39.71	.20	.06	.09	1.49	5.26	1.55	5.35	.00	1.55		
90108	.09	.00	.00	40.43	.20	.08	.12	1.58	5.59	1.66	5.71	.00	1.66		
90112	.14	.00	.00	41.69	.20	.10	.14	1.72	6.06	1.82	6.20	.00	1.82		
90113	.03	.00	.00	42.59	.20	.11	.15	1.74	6.18	1.85	6.33	.00	1.85		
90114	.77	.15	.00	42.96	.22	.11	.15	1.86	6.31	1.97	6.46	.00	1.97		
90115	.01	.00	.00	43.32	.22	.11	.15	1.89	6.43	2.01	6.59	.00	2.01		
90116	.02	.00	.00	43.68	.22	.12	.16	1.93	6.56	2.05	6.71	.00	2.05		
90117	.04	.00	.00	44.04	.22	.12	.16	1.96	6.69	2.08	6.85	.00	2.08		
90118	.06	.00	.00	44.40	.22	.12	.16	2.01	6.82	2.13	6.98	.00	2.13		
90119	.13	.00	.00	44.76	.22	.12	.16	2.11	6.95	2.24	7.11	.00	2.24		
90120	.01	.00	.00	45.12	.22	.12	.17	2.14	7.08	2.27	7.25	.00	2.27		
90122	.07	.00	.00	45.66	.22	.13	.17	2.22	7.35	2.35	7.53	.00	2.35		
90124	.02	.00	.00	46.38	.22	.14	.18	2.27	7.63	2.41	7.81	.00	2.41		
90127	.01	.00	.00	47.27	.22	.15	.19	2.33	8.07	2.48	8.25	.00	2.48		
90128	.03	.00	.00	47.97	.22	.15	.19	2.35	8.21	2.50	8.41	.00	2.50		
90129	.07	.00	.00	48.32	.22	.15	.20	2.41	8.36	2.56	8.56	.00	2.56		
90130	.01	.00	.00	48.67	.21	.16	.20	2.44	8.52	2.59	8.71	.00	2.59		
90131	.03	.00	.00	49.02	.22	.16	.20	2.46	8.67	2.62	8.87	.00	2.62		
90132	.01	.00	.00	49.36	.21	.17	.21	2.48	8.82	2.65	9.03	.00	2.65		
90133	.31	.00	.00	49.70	.22	.17	.21	2.64	8.98	2.81	9.19	.00	2.81		
90134	.13	.00	.00	50.04	.22	.18	.22	2.75	9.14	2.92	9.36	.00	2.92		
90135	.17	.00	.00	50.38	.22	.18	.22	2.88	9.30	3.06	9.52	.00	3.06		
90137	.21	.00	.00	50.89	.22	.19	.23	3.07	9.62	3.26	9.85	.00	3.26		
90138	.12	.00	.00	51.39	.23	.20	.24	3.16	9.79	3.36	10.02	.00	3.36		
90139	.03	.00	.00	51.72	.22	.20	.24	3.22	9.95	3.42	10.20	.00	3.42		
90140	.90	.28	.00	52.04	.25	.21	.25	3.39	10.12	3.60	10.37	.00	3.60		
90141	.01	.00	.00	52.37	.24	.21	.25	3.51	10.29	3.73	10.55	.00	3.73		
90143	.11	.00	.00	52.85	.24	.23	.27	3.68	10.64	3.91	10.90	.00	3.91		
90144	.03	.00	.00	53.32	.23	.23	.27	3.77	10.81	4.00	11.08	.00	4.00		

90145	.15	.00	.00	53.63	.23	.24	.28	3.89	10.99	4.12	11.27	.00	4.12
90146	.01	.00	.00	53.94	.23	.25	.29	3.94	11.16	4.19	11.45	.00	4.19
90148	.02	.00	.00	54.40	.23	.26	.30	4.04	11.52	4.30	11.82	.00	4.30
90149	.24	.00	.00	54.85	.23	.27	.31	4.22	11.70	4.49	12.01	.00	4.49
90150	.55	.04	.00	55.14	.25	.28	.32	4.40	11.89	4.68	12.20	.00	4.68
90151	.26	.00	.00	55.44	.25	.28	.33	4.59	12.07	4.87	12.40	.00	4.87
90152	.01	.00	.00	55.72	.24	.29	.33	4.71	12.26	5.00	12.59	.00	5.00
90158	.05	.00	.00	56.69	.23	.34	.39	4.97	13.40	5.31	13.79	.00	5.31
90159	.01	.00	.00	57.63	.23	.35	.40	5.01	13.60	5.36	13.99	.00	5.36
90160	.20	.00	.00	57.88	.23	.36	.41	5.17	13.79	5.53	14.20	.00	5.53
90161	.01	.00	.00	58.13	.23	.37	.42	5.20	13.99	5.58	14.40	.00	5.58
90162	.01	.00	.00	58.38	.23	.38	.43	5.24	14.19	5.62	14.61	.00	5.62
90164	.02	.00	.00	58.74	.22	.40	.44	5.31	14.59	5.71	15.03	.00	5.71
90165	.15	.00	.00	59.09	.22	.41	.45	5.43	14.79	5.84	15.24	.00	5.84
90166	.29	.00	.00	59.32	.23	.42	.46	5.63	14.99	6.05	15.45	.00	6.05
90167	.28	.00	.00	59.54	.23	.43	.47	5.76	15.19	6.19	15.67	.00	6.19
90169	.02	.00	.00	59.86	.23	.45	.49	5.88	15.60	6.33	16.09	.00	6.33
90176	.13	.00	.00	60.76	.22	.52	.57	6.15	17.05	6.68	17.62	.00	6.68
90178	.01	.00	.00	61.56	.22	.55	.59	6.21	17.47	6.75	18.06	.00	6.75
90179	.02	.00	.00	61.81	.21	.56	.60	6.25	17.68	6.80	18.28	.00	6.80
90183	.18	.00	.00	62.18	.21	.60	.64	6.45	18.53	7.05	19.17	.00	7.05
90184	.01	.00	.00	62.52	.21	.61	.65	6.48	18.75	7.08	19.40	.00	7.08
90188	.05	.00	.00	62.82	.21	.65	.69	6.57	19.60	7.21	20.29	.00	7.21
90193	.01	.00	.00	63.26	.20	.69	.74	6.66	20.67	7.34	21.41	.00	7.34
90201	.01	.00	.00	63.69	.19	.74	.83	6.77	22.37	7.51	23.20	.00	7.51
90205	.02	.00	.00	63.87	.19	.76	.87	6.82	23.22	7.59	24.09	.00	7.59
90207	.28	.00	.00	63.87	.19	.78	.89	7.05	23.64	7.82	24.53	.00	7.82
90208	.01	.00	.00	63.85	.19	.78	.90	7.07	23.84	7.85	24.75	.00	7.85
90209	.01	.00	.00	63.83	.19	.79	.91	7.09	24.05	7.88	24.96	.00	7.88
90211	.02	.00	.00	63.79	.19	.80	.93	7.12	24.47	7.91	25.40	.00	7.91
90212	.55	.00	.00	63.73	.20	.81	.94	7.32	24.67	8.13	25.61	.00	8.13
90223	.45	.00	.00	63.33	.20	.88	1.05	7.71	26.87	8.59	27.92	.00	8.59
90229	.08	.00	.00	62.46	.20	.93	1.11	7.89	28.02	8.82	29.12	.00	8.82
90230	.35	.00	.00	61.97	.20	.94	1.12	8.08	28.20	9.02	29.32	.00	9.02
90231	.24	.00	.00	61.82	.21	.95	1.13	8.20	28.39	9.14	29.51	.00	9.14
90232	.11	.00	.00	61.66	.21	.95	1.13	8.31	28.57	9.26	29.70	.00	9.26
90233	.03	.00	.00	61.50	.21	.96	1.14	8.40	28.75	9.37	29.90	.00	9.37
90234	.07	.00	.00	61.33	.21	.97	1.15	8.46	28.93	9.43	30.08	.00	9.43
90235	.12	.00	.00	61.15	.21	.98	1.16	8.55	29.11	9.53	30.27	.00	9.53
90236	.02	.00	.00	60.97	.20	.99	1.17	8.63	29.29	9.62	30.46	.00	9.62
90237	.35	.00	.00	60.79	.21	1.00	1.18	8.80	29.47	9.80	30.64	.00	9.80
90238	.11	.00	.00	60.59	.21	1.01	1.19	8.95	29.64	9.95	30.83	.00	9.95
90239	.06	.00	.00	60.40	.21	1.01	1.20	9.06	29.81	10.07	31.01	.00	10.07
90243	.01	.00	.00	59.88	.20	1.02	1.20	9.25	30.49	10.27	31.69	.00	10.27
90246	.01	.00	.00	59.11	.19	1.02	1.20	9.34	30.98	10.36	32.19	.00	10.36
90247	.07	.00	.00	58.66	.19	1.02	1.20	9.40	31.14	10.42	32.33	.00	10.42
90248	.09	.00	.00	58.40	.19	1.02	1.20	9.47	31.30	10.49	32.50	.00	10.49
90251	.20	.00	.00	57.90	.19	1.02	1.20	9.67	31.77	10.69	32.97	.00	10.69
90253	.08	.00	.00	57.26	.19	1.02	1.20	9.76	32.07	10.78	33.27	.00	10.78
90269	.01	.00	.00	54.69	.19	1.02	1.20	10.05	34.23	11.08	35.43	.00	11.08
90270	.04	.00	.00	52.07	.18	1.02	1.20	10.08	34.35	11.11	35.55	.00	11.11
90275	.05	.00	.00	51.08	.18	1.02	1.20	10.18	34.92	11.20	36.12	.00	11.20
90276	.02	.00	.00	50.08	.18	1.02	1.20	10.19	35.03	11.22	36.23	.00	11.22
90277	.02	.00	.00	49.74	.18	1.02	1.20	10.21	35.14	11.23	36.34	.00	11.23
90278	.03	.00	.00	49.39	.18	1.02	1.20	10.23	35.24	11.26	36.45	.00	11.26
90279	.01	.00	.00	49.05	.18	1.02	1.20	10.26	35.34	11.28	36.55	.00	11.28
90289	.12	.00	.00	47.12	.18	1.02	1.20	10.45	36.29	11.47	37.49	.00	11.47
90292	.03	.00	.00	44.80	.17	1.02	1.20	10.50	36.54	11.52	37.75	.00	11.52
90305	.02	.00	.00	41.91	.17	1.02	1.20	10.63	37.48	11.65	38.69	.00	11.65
90308	.07	.00	.00	39.03	.17	1.03	1.20	10.69	37.67	11.71	38.87	.00	11.71
90309	.24	.00	.00	38.32	.18	1.03	1.20	10.75	37.72	11.77	38.93	.00	11.77
90310	.02	.00	.00	37.97	.18	1.03	1.20	10.76	37.78	11.79	38.99	.00	11.79
90318	.25	.00	.00	36.40	.18	1.03	1.20	10.89	38.20	11.92	39.41	.00	11.92
90319	.03	.00	.00	34.86	.18	1.03	1.20	10.92	38.25	11.94	39.46	.00	11.94
90324	.12	.00	.00	33.87	.18	1.03	1.20	11.02	38.48	12.04	39.68	.00	12.04

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	=	13.380 IN
PRECIP., NET	=	13.380 IN

PREDICTED RUNOFF = 1.332 IN
DEEP PERCOLATION = .000 IN
ACTUAL PLANT EVAP = 1.029 IN
ACTUAL SOIL EVAP = 11.360 IN
TOTAL ET = 12.389 IN
TOTAL INTERCEPTION= .000 IN
TOTAL INT PLUS ET = 12.389 IN
BEGIN SOIL WATER = .340 IN
FINAL SOIL WATER = .000 IN
IRRIGATION APPLIED= .000 IN
WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.03	.00	25.55	.17	.00	.00	.07	3.27	.07	3.27	.00	.07		
91084	.06	.00	.00	32.55	.17	.00	.00	.13	3.34	.13	3.34	.00	.13		
91085	.29	.10	.00	32.87	.18	.00	.00	.20	3.42	.20	3.42	.00	.20		
91086	.17	.04	.00	33.19	.18	.00	.00	.28	3.50	.28	3.50	.00	.28		
91087	.15	.04	.00	33.51	.18	.00	.00	.36	3.58	.36	3.58	.00	.36		
91088	.19	.06	.00	33.84	.18	.00	.00	.44	3.66	.44	3.66	.00	.44		
91089	.22	.07	.00	34.17	.19	.00	.00	.52	3.74	.52	3.74	.00	.52		
91090	.25	.10	.00	34.50	.19	.00	.00	.60	3.82	.60	3.82	.00	.60		
91091	.28	.12	.00	34.83	.19	.00	.00	.69	3.91	.69	3.91	.00	.69		
91092	.02	.00	.00	35.17	.19	.00	.00	.71	3.99	.71	3.99	.00	.71		
91093	.02	.00	.00	35.51	.19	.00	.00	.72	4.08	.73	4.09	.00	.73		
91094	.05	.00	.00	35.85	.19	.00	.01	.76	4.17	.77	4.18	.00	.77		
91096	.21	.08	.00	36.36	.19	.01	.02	.86	4.35	.87	4.37	.00	.87		
91100	.02	.00	.00	37.41	.19	.03	.04	.91	4.74	.93	4.78	.00	.93		
91102	.01	.00	.00	38.46	.19	.04	.06	.93	4.94	.97	5.01	.00	.97		
91105	.05	.00	.00	39.35	.19	.06	.10	.99	5.26	1.05	5.35	.00	1.05		
91106	.05	.00	.00	40.07	.19	.06	.11	1.03	5.37	1.09	5.47	.00	1.09		
91107	.10	.00	.00	40.43	.19	.07	.11	1.11	5.48	1.18	5.59	.00	1.18		
91108	.03	.00	.00	40.79	.19	.07	.12	1.13	5.59	1.21	5.72	.00	1.21		
91109	.03	.00	.00	41.15	.19	.08	.13	1.16	5.71	1.24	5.84	.00	1.24		
91116	.01	.00	.00	42.59	.19	.10	.17	1.23	6.56	1.32	6.73	.00	1.32		
91119	.05	.00	.00	44.40	.19	.10	.18	1.28	6.95	1.38	7.12	.00	1.38		
91120	.09	.00	.00	45.12	.19	.10	.18	1.35	7.08	1.46	7.26	.00	1.46		
91121	.01	.00	.00	45.48	.19	.11	.18	1.37	7.22	1.48	7.40	.00	1.48		
91123	.02	.00	.00	46.02	.19	.11	.19	1.40	7.49	1.50	7.68	.00	1.50		
91128	.12	.00	.00	47.26	.19	.12	.21	1.52	8.21	1.64	8.42	.00	1.64		
91129	.22	.00	.00	48.32	.19	.12	.21	1.67	8.36	1.79	8.58	.00	1.79		
91130	.25	.00	.00	48.67	.19	.12	.22	1.82	8.51	1.95	8.73	.00	1.95		
91131	.37	.00	.00	49.02	.21	.13	.22	1.98	8.67	2.10	8.89	.00	2.10		
91132	.01	.00	.00	49.36	.20	.13	.23	2.00	8.82	2.13	9.05	.00	2.13		
91134	.21	.00	.00	49.87	.20	.14	.24	2.17	9.14	2.31	9.37	.00	2.31		
91137	.16	.00	.00	50.72	.20	.16	.25	2.32	9.62	2.48	9.87	.00	2.48		
91138	.55	.08	.00	51.39	.22	.16	.26	2.49	9.79	2.65	10.04	.00	2.65		
91139	.38	.03	.00	51.72	.23	.17	.26	2.60	9.95	2.77	10.22	.00	2.77		
91140	.02	.00	.00	52.04	.23	.17	.27	2.69	10.12	2.86	10.39	.00	2.86		
91141	.01	.00	.00	52.37	.23	.18	.28	2.75	10.29	2.92	10.57	.00	2.92		
91145	.25	.00	.00	53.16	.22	.21	.30	3.02	10.98	3.23	11.29	.00	3.23		
91147	.28	.00	.00	54.09	.23	.22	.32	3.17	11.34	3.39	11.66	.00	3.39		
91148	.01	.00	.00	54.55	.23	.23	.33	3.25	11.52	3.47	11.85	.00	3.47		
91149	.02	.00	.00	54.85	.22	.24	.33	3.31	11.70	3.55	12.04	.00	3.55		
91150	.12	.00	.00	55.14	.22	.24	.34	3.41	11.89	3.65	12.23	.00	3.65		
91151	.03	.00	.00	55.44	.22	.25	.35	3.48	12.07	3.73	12.42	.00	3.73		
91154	.03	.00	.00	56.01	.22	.28	.38	3.60	12.63	3.88	13.01	.00	3.88		
91155	.12	.00	.00	56.56	.22	.29	.38	3.70	12.82	3.98	13.21	.00	3.98		
91156	.57	.04	.00	56.84	.23	.30	.39	3.89	13.01	4.19	13.41	.00	4.19		
91157	.15	.00	.00	57.10	.23	.31	.40	4.07	13.21	4.38	13.61	.00	4.38		
91158	.12	.00	.00	57.37	.23	.32	.41	4.23	13.40	4.55	13.81	.00	4.55		
91159	.01	.00	.00	57.63	.22	.33	.42	4.33	13.59	4.66	14.02	.00	4.66		
91171	.91	.12	.00	59.17	.21	.44	.55	4.85	16.01	5.29	16.56	.00	5.29		
91173	.03	.00	.00	60.67	.22	.46	.57	5.06	16.42	5.53	16.99	.00	5.53		
91174	.02	.00	.00	60.95	.22	.48	.58	5.13	16.63	5.60	17.21	.00	5.60		
91175	.02	.00	.00	61.14	.22	.49	.59	5.18	16.84	5.67	17.43	.00	5.67		
91176	.03	.00	.00	61.31	.21	.50	.60	5.24	17.05	5.74	17.65	.00	5.74		
91177	.01	.00	.00	61.48	.21	.51	.61	5.28	17.26	5.79	17.87	.00	5.79		
91179	.11	.00	.00	61.73	.21	.53	.63	5.40	17.68	5.92	18.32	.00	5.92		

91181	.05	.00	.00	62.03	.21	.55	.65	5.46	18.11	6.01	18.76	.00	6.01
91182	.02	.00	.00	62.25	.21	.56	.66	5.51	18.32	6.07	18.98	.00	6.07
91191	.10	.00	.00	62.86	.20	.64	.76	5.74	20.24	6.38	21.00	.00	6.38
91195	.03	.00	.00	63.46	.19	.66	.81	5.81	21.10	6.48	21.90	.00	6.48
91206	.22	.00	.00	63.80	.19	.72	.93	6.13	23.43	6.85	24.35	.00	6.85
91207	.12	.00	.00	63.87	.19	.73	.94	6.22	23.63	6.95	24.57	.00	6.95
91213	.29	.00	.00	63.78	.18	.75	1.00	6.50	24.87	7.25	25.87	.00	7.25
91214	.02	.00	.00	63.63	.19	.76	1.01	6.51	25.08	7.27	26.09	.00	7.27
91218	.06	.00	.00	63.47	.18	.77	1.05	6.60	25.88	7.37	26.94	.00	7.37
91235	.09	.00	.00	62.33	.18	.81	1.22	6.86	29.11	7.67	30.33	.00	7.67
91239	.28	.00	.00	60.69	.17	.81	1.25	7.07	29.81	7.88	31.06	.00	7.88
91240	.61	.02	.00	60.20	.20	.82	1.26	7.24	29.98	8.06	31.24	.00	8.06
91251	.24	.00	.00	58.86	.19	.82	1.26	7.60	31.76	8.43	33.02	.00	8.43
91252	.03	.00	.00	57.39	.19	.82	1.26	7.63	31.92	8.45	33.18	.00	8.45
91254	.84	.13	.00	56.99	.20	.82	1.26	7.80	32.21	8.62	33.47	.00	8.62
91256	.01	.00	.00	56.45	.21	.82	1.26	8.01	32.51	8.83	33.77	.00	8.83
91257	.19	.00	.00	56.03	.21	.82	1.26	8.12	32.65	8.94	33.91	.00	8.94
91272	.11	.00	.00	53.63	.20	.82	1.26	8.64	34.58	9.46	35.84	.00	9.46
91277	.10	.00	.00	50.41	.19	.82	1.26	8.79	35.13	9.61	36.39	.00	9.61
91290	.06	.00	.00	47.29	.18	.82	1.26	9.00	36.37	9.83	37.64	.00	9.83
91291	.01	.00	.00	44.80	.18	.82	1.26	9.03	36.46	9.85	37.72	.00	9.85
91295	.12	.00	.00	43.89	.18	.82	1.26	9.14	36.78	9.96	38.04	.00	9.96
91298	.01	.00	.00	42.63	.18	.82	1.26	9.19	37.00	10.01	38.26	.00	10.01
91299	.18	.00	.00	41.90	.18	.82	1.26	9.26	37.08	10.08	38.34	.00	10.08
91300	.28	.00	.00	41.54	.19	.82	1.26	9.33	37.15	10.15	38.41	.00	10.15
91301	.06	.00	.00	41.18	.19	.82	1.26	9.38	37.22	10.20	38.48	.00	10.20
91302	.01	.00	.00	40.82	.19	.82	1.26	9.41	37.28	10.23	38.54	.00	10.23
91304	.24	.00	.00	40.28	.20	.82	1.26	9.49	37.42	10.32	38.68	.00	10.32
91305	.12	.00	.00	39.74	.20	.82	1.26	9.56	37.48	10.38	38.74	.00	10.38
91309	.18	.00	.00	38.85	.20	.82	1.26	9.72	37.72	10.54	38.98	.00	10.54
91310	.14	.00	.00	37.97	.21	.82	1.26	9.78	37.78	10.60	39.04	.00	10.60
91313	.09	.00	.00	37.26	.21	.82	1.26	9.94	37.95	10.76	39.21	.00	10.76
91316	.04	.00	.00	36.22	.20	.82	1.26	10.07	38.10	10.89	39.36	.00	10.89
91317	.06	.00	.00	35.54	.20	.82	1.26	10.12	38.15	10.94	39.41	.00	10.94
91322	.07	.00	.00	34.53	.20	.82	1.26	10.27	38.39	11.10	39.65	.00	11.10
91323	.04	.00	.00	33.54	.20	.82	1.26	10.31	38.43	11.13	39.69	.00	11.13
91324	.12	.00	.00	33.22	.20	.82	1.26	10.35	38.48	11.17	39.74	.00	11.17
91325	.09	.00	.00	32.90	.20	.82	1.26	10.39	38.52	11.21	39.78	.00	11.21
91326	.01	.00	.00	32.58	.20	.82	1.26	10.43	38.56	11.26	39.82	.00	11.26

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	1.060 IN
OEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	.822 IN
ACTUAL SOIL EVAP	=	11.046 IN
TOTAL ET	=	11.868 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	11.868 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.081 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	1.505
DEEP PERCOLATION	=	.000
TOTAL ET	=	12.209
IRRIGATION APPLIED	=	.000

AVG. AVAL. STORAGE	=	4.111 IN
FINAL AVAL. STORAGE	=	4.979 IN

FINAL STORAGE FOR EACH FRACTION

.000	.000	.000	.081	.000	.000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

RAMSAY FLATS CONTROL PLOT SIMULATION

1989-1991

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.440	.000	6.013	.000
FEB	.000	.000	.000	.455	.000	5.544	.000
MAR	1.245	1.245	.377	.746	.000	5.220	.000
APR	3.735	3.735	1.660	2.065	.000	5.626	.000
MAY	1.480	1.480	.000	1.606	.000	5.279	.000
JUN	.920	.920	.000	1.494	.000	5.026	.000
JUL	1.070	1.070	.000	1.414	.000	4.487	.000
AUG	2.180	2.180	.086	1.913	.000	4.394	.000
SEP	.300	.300	.000	.736	.000	4.341	.000
OCT	.860	.860	.000	.820	.000	4.199	.000
NOV	.170	.170	.000	.422	.000	4.086	.000
DEC	.000	.000	.000	.257	.000	3.819	.000
TOT	11.960	11.960	2.124	12.369	.000	4.836	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.209	.000	3.590	.000
FEB	.000	.000	.000	.131	.000	3.409	.000
MAR	1.115	1.115	.266	.550	.000	3.389	.000
APR	2.875	2.875	.743	1.377	.000	4.043	.000
MAY	3.500	3.500	.323	2.601	.000	4.522	.000
JUN	1.210	1.210	.000	1.994	.000	4.512	.000
JUL	1.150	1.150	.000	1.267	.000	3.935	.000
AUG	2.000	2.000	.000	2.143	.000	4.024	.000
SEP	.500	.500	.000	.874	.000	3.758	.000
OCT	.280	.280	.000	.491	.000	3.479	.000
NOV	.750	.750	.000	.544	.000	3.569	.000
DEC	.000	.000	.000	.206	.000	3.417	.000
TOT	13.380	13.380	1.332	12.389	.000	3.804	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	3.360	.000
FEB	.000	.000	.000	.000	.000	3.360	.000
MAR	1.475	1.475	.437	.605	.000	3.419	.000
APR	1.025	1.025	.204	.852	.000	3.825	.000
MAY	3.040	3.040	.108	2.273	.000	4.162	.000
JUN	2.180	2.180	.156	2.281	.000	4.305	.000

JUL	.490	.490	.000	1.025	.000	3.827	.000
AUG	1.350	1.350	.022	1.103	.000	3.596	.000
SEP	1.420	1.420	.134	1.341	.000	3.919	.000
OCT	1.070	1.070	.000	.837	.000	3.700	.000
NOV	.960	.960	.000	1.142	.000	4.012	.000
DEC	.000	.000	.000	.409	.000	3.617	.000
TOT	13.010	13.010	1.060	11.868	.000	3.758	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.216	.000	4.321	.000
FEB	.000	.000	.000	.195	.000	4.104	.000
MAR	1.278	1.278	.360	.633	.000	4.009	.000
APR	2.545	2.545	.869	1.432	.000	4.498	.000
MAY	2.673	2.673	.144	2.160	.000	4.654	.000
JUN	1.437	1.437	.052	1.923	.000	4.614	.000
JUL	.903	.903	.000	1.235	.000	4.083	.000
AUG	1.843	1.843	.036	1.720	.000	4.004	.000
SEP	.740	.740	.045	.984	.000	4.006	.000
OCT	.737	.737	.000	.716	.000	3.792	.000
NOV	.627	.627	.000	.703	.000	3.889	.000
DEC	.000	.000	.000	.291	.000	3.618	.000
TOT	12.783	12.783	1.505	12.209	.000	4.133	.000

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SNOW NOTICE
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DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

91181	.05	.00	.00	62.03	.22	1.58	4.11	5.59	15.48	7.17	19.60	.00	7.17
91182	.02	.00	.00	62.25	.22	1.59	4.20	5.63	15.64	7.22	19.84	.00	7.22
91191	.10	.00	.00	62.86	.21	1.65	4.95	5.84	17.04	7.48	21.99	.00	7.48
91195	.03	.00	.00	63.46	.21	1.66	5.28	5.86	17.66	7.52	22.94	.00	7.52
91206	.22	.00	.00	63.80	.21	1.68	6.17	6.01	19.38	7.69	25.54	.00	7.69
91207	.12	.00	.00	63.87	.22	1.68	6.25	6.11	19.53	7.79	25.78	.00	7.79
91213	.29	.00	.00	63.78	.21	1.71	6.71	6.32	20.45	8.03	27.16	.00	8.03
91214	.02	.00	.00	63.63	.22	1.72	6.79	6.35	20.60	8.07	27.39	.00	8.07
91218	.06	.00	.00	63.47	.22	1.74	7.09	6.45	21.20	8.18	28.29	.00	8.18
91235	.09	.00	.00	62.33	.21	1.75	8.26	6.56	23.62	8.31	31.88	.00	8.31
91239	.28	.00	.00	60.69	.21	1.76	8.51	6.70	24.15	8.47	32.66	.00	8.47
91240	.61	.00	.00	60.20	.23	1.79	8.57	6.83	24.28	8.62	32.85	.00	8.62
91251	.24	.00	.00	58.86	.22	1.79	8.57	7.24	25.63	9.03	34.20	.00	9.03
91252	.03	.00	.00	57.39	.22	1.79	8.57	7.30	25.75	9.08	34.32	.00	9.08
91254	.84	.00	.00	56.99	.23	1.79	8.57	7.43	25.98	9.22	34.55	.00	9.22
91256	.01	.00	.00	56.45	.23	1.79	8.57	7.61	26.20	9.40	34.77	.00	9.40
91257	.19	.00	.00	56.03	.24	1.79	8.57	7.72	26.31	9.51	34.88	.00	9.51
91272	.11	.00	.00	53.63	.23	1.79	8.57	8.29	27.80	10.08	36.37	.00	10.08
91277	.10	.00	.00	50.41	.22	1.79	8.57	8.44	28.23	10.23	36.80	.00	10.23
91290	.06	.00	.00	47.29	.22	1.79	8.57	8.66	29.20	10.45	37.77	.00	10.45
91291	.01	.00	.00	44.80	.22	1.79	8.57	8.69	29.26	10.48	37.83	.00	10.48
91295	.12	.00	.00	43.89	.22	1.79	8.57	8.78	29.52	10.57	38.09	.00	10.57
91298	.01	.00	.00	42.63	.22	1.79	8.57	8.83	29.69	10.62	38.26	.00	10.62
91299	.18	.00	.00	41.90	.22	1.79	8.57	8.89	29.75	10.68	38.32	.00	10.68
91300	.28	.00	.00	41.54	.23	1.79	8.57	8.95	29.81	10.74	38.38	.00	10.74
91301	.06	.00	.00	41.18	.23	1.79	8.57	8.99	29.86	10.78	38.44	.00	10.78
91302	.01	.00	.00	40.82	.23	1.79	8.57	9.03	29.92	10.82	38.49	.00	10.82
91304	.24	.00	.00	40.28	.23	1.79	8.57	9.11	30.03	10.90	38.60	.00	10.90
91305	.12	.00	.00	39.74	.23	1.79	8.57	9.16	30.08	10.95	38.65	.00	10.95
91309	.18	.00	.00	38.85	.23	1.79	8.57	9.34	30.29	11.13	38.86	.00	11.13
91310	.14	.00	.00	37.97	.23	1.79	8.57	9.38	30.34	11.17	38.91	.00	11.17
91313	.09	.00	.00	37.26	.23	1.79	8.57	9.52	30.49	11.31	39.06	.00	11.31
91316	.04	.00	.00	36.22	.23	1.79	8.57	9.66	30.63	11.45	39.20	.00	11.45
91317	.06	.00	.00	35.54	.23	1.79	8.57	9.71	30.68	11.50	39.25	.00	11.50
91322	.07	.00	.00	34.53	.23	1.79	8.57	9.89	30.90	11.68	39.47	.00	11.68
91323	.04	.00	.00	33.54	.23	1.79	8.57	9.93	30.94	11.72	39.51	.00	11.72
91324	.12	.00	.00	33.22	.23	1.79	8.57	9.97	30.98	11.76	39.55	.00	11.76
91325	.09	.00	.00	32.90	.23	1.79	8.57	10.01	31.02	11.80	39.59	.00	11.80
91326	.01	.00	.00	32.58	.23	1.79	8.57	10.05	31.06	11.84	39.63	.00	11.84

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	.343 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	1.789 IN
ACTUAL SOIL EVAP	=	10.703 IN
TOTAL ET	=	12.492 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.492 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.175 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	.771
DEEP PERCOLATION	=	.000
TOTAL ET	=	13.773
IRRIGATION APPLIED	=	.000

AVG. AVAL. STORAGE	=	8.944 IN
FINAL AVAL. STORAGE	=	9.845 IN

FINAL STORAGE FOR EACH FRACTION

.000	.000	.000	.175	.000	.000	.000	.000	.000	.000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

RAMSAY FLATS DEEP-TILL SIMULATION

1989-1991

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.440	.000	15.497	.000
FEB	.000	.000	.000	.455	.000	15.028	.000
MAR	1.245	1.245	.250	.748	.000	14.715	.000
APR	3.735	3.735	1.246	2.468	.000	15.467	.000
MAY	1.480	1.480	.000	3.245	.000	14.157	.000
JUN	.920	.920	.000	3.612	.000	11.715	.000
JUL	1.070	1.070	.000	1.307	.000	10.364	.000
AUG	2.180	2.180	.000	1.848	.000	10.474	.000
SEP	.300	.300	.000	.738	.000	10.457	.000
OCT	.860	.860	.000	.763	.000	10.366	.000
NOV	.170	.170	.000	.298	.000	10.288	.000
DEC	.000	.000	.000	.000	.000	10.260	.000
TOT	11.960	11.960	1.496	15.921	.000	12.399	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	10.260	.000
FEB	.000	.000	.000	.000	.000	10.260	.000
MAR	1.115	1.115	.135	.559	.000	10.298	.000
APR	2.875	2.875	.339	1.799	.000	11.255	.000
MAY	3.500	3.500	.000	3.407	.000	11.209	.000
JUN	1.210	1.210	.000	2.461	.000	10.640	.000
JUL	1.150	1.150	.000	.702	.000	10.291	.000
AUG	2.000	2.000	.000	2.445	.000	10.489	.000
SEP	.500	.500	.000	.503	.000	10.272	.000
OCT	.280	.280	.000	.280	.000	10.270	.000
NOV	.750	.750	.000	.537	.000	10.483	.000
DEC	.000	.000	.000	.213	.000	10.317	.000
TOT	13.380	13.380	.474	12.906	.000	10.504	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	10.260	.000
FEB	.000	.000	.000	.000	.000	10.260	.000
MAR	1.475	1.475	.233	.605	.000	10.343	.000
APR	1.025	1.025	.110	.949	.000	10.993	.000
MAY	3.040	3.040	.000	2.980	.000	11.051	.000
JUN	2.180	2.180	.000	2.634	.000	10.679	.000

EROSION INPUT PARAMETER FILENAME: rf01ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

```
CARD   1:SILVER BOW CREEK RI/FS
CARD   2:RAMSAY FLATS CONTROL PLOT
CARD   3:1989-1991
CARD   4:      89      91       2       1       0
CARD   5:    .200    .500    .300 100.0002000.000
CARD   6:      2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:      1   1.000    .450
CARD  14:      3
CARD  15:      1       0       0       0       0       0       0       0       0       0

CARD  15:      1       0       0       0       0       0       0       0       0       0

CARD  15:      1       0       0       0       0       0       0       0       0       0

CARD  16:      1   1.000
CARD  17:  1.000
CARD  18:  1.000
CARD  19:   .015
CARD  17:  1.000
CARD  18:  1.000
CARD  19:   .015
CARD  17:  1.000
CARD  18:  1.000
CARD  19:   .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.05
2	.010	2.65	.14
3	.030	1.80	.36
4	.400	1.60	.35
5	.200	2.65	.10

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600	ACRES
SLOPE LENGTH	1450.00	FT
AVERAGE SLOPE	.0199	

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.450

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .38 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 2.76 TONS/ACRE
ENRICHMENT RATIO 1.017

MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED 1.66 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 17.38 TONS/ACRE
ENRICHMENT RATIO 1.002

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
2 STORMS PRODUCED .09 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .65 TONS/ACRE
ENRICHMENT RATIO 1.077

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
15 STORMS PRODUCED 2.12 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 20.79 TONS/ACRE
ENRICHMENT RATIO 1.006

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MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
6 STORMS PRODUCED .27 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.81 TONS/ACRE
ENRICHMENT RATIO 1.021

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
5 STORMS PRODUCED .74 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 6.78 TONS/ACRE
ENRICHMENT RATIO 1.015

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
2 STORMS PRODUCED .32 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 3.40 TONS/ACRE
ENRICHMENT RATIO 1.025

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
13 STORMS PRODUCED 1.33 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 12.00 TONS/ACRE
ENRICHMENT RATIO 1.019

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .44 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 3.18 TONS/ACRE
ENRICHMENT RATIO 1.018

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .20 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.67 TONS/ACRE
ENRICHMENT RATIO 1.012

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
2 STORMS PRODUCED .11 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .81 TONS/ACRE
ENRICHMENT RATIO 1.055

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
2 STORMS PRODUCED .16 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.33 TONS/ACRE
ENRICHMENT RATIO 1.061

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
1 STORMS PRODUCED .02 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .16 TONS/ACRE
ENRICHMENT RATIO 1.089

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
1 STORMS PRODUCED .13 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.23 TONS/ACRE
ENRICHMENT RATIO 1.048

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR NOV, 1991

11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991

94 STORMS PRODUCED 13.01 IN. OF RAINFALL
15 STORMS PRODUCED 1.06 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 8.38 TONS/ACRE
ENRICHMENT RATIO 1.033

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

ILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991

STORM SUMMARY

314 STORMS PRODUCED 38.35 IN. OF RAINFALL
43 STORMS PRODUCED 4.52 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.05	103845.	.2759	.0044	4422.
2	.14	267636.	.7111	.0114	11396.
3	.36	686410.	1.8238	.0292	29228.
4	.34	651630.	1.7314	.0277	27747.
5	.10	180692.	.4801	.0077	7694.
TOTAL		1890214.	5.0224	.0805	80488.

TOTAL SOIL LOSS FOR AREA 41.16 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.203
SILT	.502
SAND	.294
ORGANIC MATTER	.005

INDEX OF SPECIFIC SURFACE 28.10 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.015

GLEAMS HYDROLOGY/EROSION OUTPUT

RF02

HYDROLOGY INPUT PARAMETER FILENAME: rf02.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
RAMSAY FLATS DEEP-TILL SIMULATION
1989-1991

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	90	.00
0	1	103	.30
0	1	117	.60
0	1	131	.90
0	1	145	1.20
0	1	159	1.50
0	1	297	1.25
0	1	310	1.00
0	1	338	.50
0	1	366	.00
0	2	90	.00
0	2	103	.30
0	2	117	.60
0	2	131	.90
0	2	145	1.20
0	2	159	1.50
0	2	297	1.25
0	2	310	1.00
0	2	338	.50
0	2	366	.00
0	3	90	.00
0	3	103	.30
0	3	117	.60
0	3	131	.90
0	3	145	1.20
0	3	159	1.50
0	3	297	1.25
0	3	310	1.00
0	3	338	.50
0	3	366	.00

FIELD AREA	=	22.960 ACRES
ROOTING DEPTH	=	48.000 IN
SATURATED CONDUCTIVITY	=	.071 IN/HR
AVG. FUL	=	.686
AVG. FIELD CAPACITY	=	.347 IN/IN
INITIAL STORAGE FRACTION	=	.850
EVAPORATION COEFFICIENT	=	3.300
AVERAGE POROSITY	=	.423 CC/CC
SCS CURVE NUMBER	=	78.000
CHANNEL SLOPE	=	.015 FT/FT
WATERSHED LEN/WIDTH RATIO	=	1.000
PEAK FLOW RATE COEFFICIENT	=	39.019

PEAK FLOW RATE EXPONENT = .868
UPPER LIMIT OF STORAGE = 10.020 IN
AVG. 15-BAR WATER CONTENT = .214 IN/IN
INITIAL SOIL WATER STORAGE = 5.457 IN
FRAC. P.A.W. TO BEGIN IRR. = .000
FRAC. P.A.W. TO END IRR. = .000

UPPER LIMIT OF STORAGES, IN

.071	.505	.505	1.860	1.860	.780	.780	.780	.780	2.100

INITIAL PLANT AVAILABLE STORAGE, IN

.044	.310	.310	1.020	1.020	.510	.510	.510	.510	.714

POROSITY BY LAYER (CC/CC)

.400	.400	.400	.430	.430	.430	.430	.430	.430	.400

FUL BY LAYER (IN/IN)

.722	.722	.722	.645	.645	.769	.769	.769	.769	.400

FEILD CAPACITY BY LAYER (IN/IN)

.350	.350	.350	.320	.320	.400	.400	.400	.400	.190

FIELD CAPACITY BY LAYER (IN)

.138	.981	.981	1.920	1.920	2.400	2.400	2.400	2.400	1.140

15-BAR WATER CONTENT BY LAYER (IN/IN)

.220	.220	.220	.120	.120	.300	.300	.300	.300	.050

WATER CONTENT AT WILT. PT. BY LAYER (IN)

.087	.617	.617	.720	.720	1.800	1.800	1.800	1.800	.300

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.31	.00	.00	1.16	1.82	1.16	1.82	.00	1.16		
89084	.05	.00	.00	32.55	.30	.00	.00	1.20	1.86	1.20	1.86	.00	1.20		
89085	.17	.03	.00	32.87	.31	.00	.00	1.24	1.90	1.24	1.90	.00	1.24		
89086	.12	.01	.00	33.19	.31	.00	.00	1.32	1.98	1.32	1.98	.00	1.32		
89087	.20	.04	.00	33.51	.31	.00	.00	1.40	2.06	1.40	2.06	.00	1.40		
89088	.19	.04	.00	33.84	.31	.00	.00	1.48	2.14	1.48	2.14	.00	1.48		
89089	.23	.05	.00	34.17	.31	.00	.00	1.56	2.22	1.56	2.22	.00	1.56		
89090	.26	.07	.00	34.50	.31	.00	.00	1.64	2.30	1.64	2.30	.00	1.64		
89091	.28	.09	.00	34.83	.32	.00	.00	1.73	2.39	1.73	2.39	.00	1.73		
89092	.37	.14	.00	35.17	.32	.00	.00	1.81	2.47	1.82	2.48	.00	1.82		
89093	.36	.15	.00	35.51	.32	.00	.00	1.88	2.56	1.88	2.57	.00	1.88		
89094	.38	.17	.00	35.85	.32	.01	.01	1.97	2.65	1.97	2.66	.00	1.97		
89095	.42	.20	.00	36.19	.33	.01	.01	2.06	2.74	2.07	2.75	.00	2.07		
89096	.45	.23	.00	36.54	.33	.02	.02	2.15	2.84	2.17	2.85	.00	2.17		
89097	.49	.26	.00	36.88	.33	.02	.02	2.24	2.93	2.27	2.95	.00	2.27		
89098	.05	.00	.00	37.23	.33	.03	.03	2.34	3.03	2.37	3.05	.00	2.37		
89099	.05	.00	.00	37.58	.33	.04	.04	2.44	3.12	2.47	3.16	.00	2.47		
89100	.01	.00	.00	37.93	.33	.04	.04	2.51	3.22	2.55	3.27	.00	2.55		
89106	.05	.00	.00	39.17	.32	.12	.12	2.81	3.84	2.92	3.96	.00	2.92		
89107	.15	.00	.00	40.43	.32	.13	.13	2.91	3.95	3.04	4.08	.00	3.04		
89111	.01	.00	.00	41.33	.32	.21	.21	3.03	4.37	3.24	4.58	.00	3.24		
89112	.10	.00	.00	42.23	.32	.23	.23	3.11	4.48	3.34	4.71	.00	3.34		
89113	.18	.00	.00	42.59	.32	.25	.25	3.22	4.59	3.48	4.85	.00	3.48		
89114	.13	.00	.00	42.96	.32	.28	.28	3.33	4.70	3.61	4.98	.00	3.61		
89115	.03	.00	.00	43.32	.32	.30	.30	3.39	4.81	3.69	5.12	.00	3.69		
89117	.19	.00	.00	43.86	.32	.36	.36	3.53	5.04	3.89	5.40	.00	3.89		
89118	.02	.00	.00	44.40	.32	.39	.39	3.59	5.15	3.98	5.54	.00	3.98		
89119	.01	.00	.00	44.76	.32	.42	.42	3.63	5.26	4.05	5.68	.00	4.05		
89122	.02	.00	.00	45.48	.31	.52	.52	3.73	5.61	4.25	6.13	.00	4.25		
89127	.02	.00	.00	46.91	.31	.73	.73	3.85	6.19	4.58	6.92	.00	4.58		
89128	.06	.00	.00	47.97	.30	.77	.77	3.90	6.31	4.67	7.08	.00	4.67		
89129	.02	.00	.00	48.32	.30	.82	.82	3.94	6.43	4.75	7.24	.00	4.75		
89130	.01	.00	.00	48.67	.30	.87	.87	3.96	6.54	4.83	7.41	.00	4.83		
89131	.15	.00	.00	49.02	.30	.92	.92	4.08	6.66	5.00	7.58	.00	5.00		
89132	.01	.00	.00	49.36	.30	.97	.97	4.11	6.78	5.08	7.75	.00	5.08		

89133	.10	.00	.00	49.70	.30	1.03	1.03	4.19	6.90	5.22	7.93	.00	5.22
89134	.01	.00	.00	50.04	.30	1.08	1.08	4.22	7.02	5.30	8.10	.00	5.30
89135	.13	.00	.00	50.38	.30	1.14	1.14	4.32	7.14	5.46	8.28	.00	5.46
89136	.01	.00	.00	50.72	.30	1.20	1.20	4.35	7.26	5.55	8.46	.00	5.55
89138	.17	.00	.00	51.22	.29	1.33	1.33	4.49	7.50	5.81	8.83	.00	5.81
89139	.01	.00	.00	51.72	.29	1.39	1.39	4.52	7.62	5.91	9.01	.00	5.91
89143	.01	.00	.00	52.53	.29	1.68	1.68	4.59	8.10	6.27	9.78	.00	6.27
89144	.04	.00	.00	53.32	.28	1.75	1.75	4.63	8.22	6.38	9.98	.00	6.38
89145	.01	.00	.00	53.63	.28	1.83	1.83	4.65	8.35	6.48	10.18	.00	6.48
89148	.50	.00	.00	54.25	.28	2.08	2.08	4.80	8.71	6.88	10.79	.00	6.88
89149	.20	.00	.00	54.85	.28	2.17	2.17	4.88	8.83	7.04	10.99	.00	7.04
89153	.01	.00	.00	55.58	.28	2.53	2.53	5.09	9.31	7.63	11.84	.00	7.63
89154	.02	.00	.00	56.29	.27	2.63	2.63	5.14	9.43	7.77	12.06	.00	7.77
89161	.17	.00	.00	57.36	.26	3.37	3.37	5.39	10.27	8.76	13.63	.00	8.76
89166	.25	.00	.00	58.85	.25	3.89	3.92	5.58	10.88	9.47	14.80	.00	9.47
89167	.31	.00	.00	59.54	.24	4.00	4.03	5.70	11.00	9.70	15.03	.00	9.70
89168	.01	.00	.00	59.76	.24	4.10	4.14	5.76	11.13	9.85	15.27	.00	9.85
89171	.09	.00	.00	60.17	.24	4.34	4.48	5.90	11.51	10.24	15.98	.00	10.24
89175	.03	.00	.00	60.86	.23	4.58	4.93	6.04	12.02	10.62	16.95	.00	10.62
89178	.03	.00	.00	61.48	.23	4.71	5.27	6.11	12.41	10.81	17.68	.00	10.81
89193	.03	.00	.00	62.71	.22	4.96	6.99	6.36	14.40	11.32	21.39	.00	11.32
89194	.12	.00	.00	63.50	.22	4.97	7.44	6.46	14.53	11.42	21.63	.00	11.42
89197	.06	.00	.00	63.62	.21	4.98	7.44	6.53	14.93	11.51	22.37	.00	11.51
89198	.09	.00	.00	63.73	.21	4.99	7.56	6.60	15.06	11.59	22.62	.00	11.59
89203	.12	.00	.00	63.82	.21	5.00	8.11	6.74	15.73	11.74	23.85	.00	11.74
89204	.02	.00	.00	63.88	.21	5.01	8.22	6.76	15.86	11.76	24.09	.00	11.76
89205	.12	.00	.00	63.88	.21	5.02	8.34	6.85	16.00	11.87	24.33	.00	11.87
89208	.35	.00	.00	63.87	.22	5.04	8.66	7.00	16.39	12.04	25.05	.00	12.04
89209	.07	.00	.00	63.83	.22	5.06	8.77	7.06	16.52	12.12	25.29	.00	12.12
89211	.07	.00	.00	63.79	.22	5.09	8.99	7.13	16.78	12.22	25.77	.00	12.22
89212	.02	.00	.00	63.73	.22	5.10	9.09	7.18	16.92	12.27	26.01	.00	12.27
89213	.10	.00	.00	63.68	.22	5.11	9.20	7.26	17.04	12.37	26.24	.00	12.37
89220	.08	.00	.00	63.42	.21	5.15	9.93	7.43	17.94	12.58	27.87	.00	12.58
89221	.12	.00	.00	63.09	.21	5.15	10.03	7.53	18.07	12.68	28.09	.00	12.68
89223	.20	.00	.00	62.94	.21	5.17	10.23	7.66	18.32	12.83	28.54	.00	12.83
89224	.03	.00	.00	62.77	.22	5.17	10.33	7.68	18.44	12.86	28.77	.00	12.86
89225	.03	.00	.00	62.65	.22	5.18	10.42	7.71	18.56	12.89	28.99	.00	12.89
89230	.02	.00	.00	62.26	.21	5.22	10.90	7.77	19.17	12.99	30.07	.00	12.99
89231	.01	.00	.00	61.82	.21	5.23	11.00	7.77	19.29	13.00	30.28	.00	13.00
89232	.05	.00	.00	61.66	.21	5.24	11.09	7.81	19.40	13.04	30.50	.00	13.04
89233	.02	.00	.00	61.50	.21	5.26	11.18	7.81	19.52	13.07	30.70	.00	13.07
89235	.80	.00	.00	61.24	.22	5.31	11.36	7.92	19.75	13.22	31.12	.00	13.22
89236	.45	.00	.00	60.97	.23	5.36	11.45	8.02	19.87	13.39	31.32	.00	13.39
89237	.06	.00	.00	60.79	.23	5.41	11.54	8.13	19.98	13.55	31.52	.00	13.55
89238	.01	.00	.00	60.59	.23	5.46	11.63	8.22	20.09	13.68	31.72	.00	13.68
89239	.08	.00	.00	60.40	.23	5.50	11.72	8.31	20.21	13.80	31.92	.00	13.80
89240	.02	.00	.00	60.20	.23	5.53	11.80	8.41	20.32	13.94	32.12	.00	13.94
89241	.01	.00	.00	59.99	.22	5.53	11.80	8.47	20.43	14.01	32.23	.00	14.01
89242	.01	.00	.00	59.78	.22	5.53	11.80	8.53	20.54	14.06	32.34	.00	14.06
89243	.08	.00	.00	59.56	.22	5.53	11.80	8.59	20.64	14.12	32.45	.00	14.12
89245	.01	.00	.00	59.22	.22	5.53	11.80	8.67	20.86	14.20	32.66	.00	14.20
89252	.03	.00	.00	58.15	.22	5.53	11.80	8.84	21.57	14.37	33.38	.00	14.37
89253	.02	.00	.00	57.13	.22	5.53	11.80	8.88	21.67	14.41	33.47	.00	14.41
89260	.12	.00	.00	56.03	.22	5.53	11.80	9.07	22.33	14.60	34.13	.00	14.60
89262	.12	.00	.00	54.73	.22	5.53	11.80	9.17	22.50	14.70	34.31	.00	14.70
89274	.22	.00	.00	52.54	.22	5.53	11.80	9.40	23.47	14.93	35.28	.00	14.93
89275	.10	.00	.00	50.42	.22	5.53	11.80	9.47	23.55	15.00	35.35	.00	15.00
89276	.01	.00	.00	50.08	.22	5.53	11.80	9.50	23.62	15.03	35.42	.00	15.03
89277	.10	.00	.00	49.74	.22	5.53	11.80	9.56	23.69	15.10	35.49	.00	15.10
89279	.05	.00	.00	49.22	.22	5.53	11.80	9.62	23.83	15.15	35.63	.00	15.15
89284	.02	.00	.00	48.00	.22	5.53	11.80	9.70	24.16	15.24	35.96	.00	15.24
89285	.02	.00	.00	46.95	.22	5.53	11.80	9.72	24.22	15.25	36.02	.00	15.25
89297	.02	.00	.00	44.61	.22	5.53	11.80	9.89	24.89	15.42	36.69	.00	15.42
89298	.06	.00	.00	42.27	.21	5.53	11.80	9.94	24.94	15.47	36.74	.00	15.47
89299	.01	.00	.00	41.90	.21	5.53	11.80	9.96	24.99	15.49	36.79	.00	15.49
89300	.02	.00	.00	41.54	.21	5.53	11.80	9.97	25.04	15.51	36.84	.00	15.51
89301	.06	.00	.00	41.18	.21	5.53	11.80	10.02	25.08	15.55	36.89	.00	15.55
89304	.17	.00	.00	40.46	.21	5.53	11.80	10.09	25.23	15.62	37.03	.00	15.62
89307	.02	.00	.00	39.39	.22	5.53	11.80	10.14	25.36	15.67	37.16	.00	15.67
89308	.01	.00	.00	38.67	.22	5.53	11.80	10.16	25.41	15.69	37.21	.00	15.69
89309	.02	.00	.00	38.32	.22	5.53	11.80	10.18	25.45	15.71	37.25	.00	15.71
89311	.01	.00	.00	37.79	.22	5.53	11.80	10.21	25.53	15.74	37.34	.00	15.74

89312	.01	.00	.00	37.26	.21	5.53	11.80	10.24	25.58	15.77	37.38	.00	15.77
89317	.02	.00	.00	36.23	.21	5.53	11.80	10.30	25.78	15.83	37.58	.00	15.83
89318	.04	.00	.00	35.20	.21	5.53	11.80	10.33	25.82	15.87	37.62	.00	15.87
89319	.03	.00	.00	34.86	.21	5.53	11.80	10.36	25.85	15.89	37.66	.00	15.89
89321	.01	.00	.00	34.36	.21	5.55	11.80	10.37	25.93	15.92	37.73	.00	15.92

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	1.496 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	5.550 IN
ACTUAL SOIL EVAP	=	10.371 IN
TOTAL ET	=	15.921 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	15.921 IN
BEGIN SOIL WATER	=	5.457 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.21	.00	.00	.04	3.27	.04	3.27	.00	.04		
90084	.05	.00	.00	32.55	.21	.00	.00	.09	3.34	.09	3.34	.00	.09		
90085	.09	.00	.00	32.87	.21	.00	.00	.16	3.42	.16	3.42	.00	.16		
90086	.12	.01	.00	33.19	.22	.00	.00	.23	3.50	.23	3.50	.00	.23		
90087	.15	.02	.00	33.51	.22	.00	.00	.31	3.58	.31	3.58	.00	.31		
90088	.18	.03	.00	33.84	.22	.00	.00	.39	3.66	.39	3.66	.00	.39		
90089	.22	.04	.00	34.17	.22	.00	.00	.48	3.74	.48	3.74	.00	.48		
90090	.25	.05	.00	34.50	.22	.00	.00	.56	3.82	.56	3.82	.00	.56		
90091	.28	.06	.00	34.83	.23	.00	.00	.64	3.91	.64	3.91	.00	.64		
90092	.32	.08	.00	35.17	.23	.00	.00	.73	3.99	.73	3.99	.00	.73		
90093	.35	.10	.00	35.51	.23	.00	.00	.82	4.08	.82	4.08	.00	.82		
90094	.32	.09	.00	35.85	.23	.00	.00	.91	4.17	.91	4.17	.00	.91		
90102	.08	.00	.00	37.41	.23	.03	.05	1.06	4.94	1.09	4.99	.00	1.09		
90104	.20	.00	.00	39.17	.23	.04	.07	1.18	5.15	1.22	5.22	.00	1.22		
90105	.02	.00	.00	39.71	.23	.05	.08	1.20	5.26	1.24	5.34	.00	1.24		
90108	.09	.00	.00	40.43	.23	.07	.12	1.30	5.58	1.37	5.71	.00	1.37		
90112	.14	.00	.00	41.69	.23	.11	.19	1.45	6.03	1.56	6.22	.00	1.56		
90113	.03	.00	.00	42.59	.23	.12	.21	1.47	6.14	1.59	6.35	.00	1.59		
90114	.77	.00	.00	42.96	.25	.14	.24	1.58	6.25	1.72	6.49	.00	1.72		
90115	.01	.00	.00	43.32	.24	.16	.26	1.67	6.36	1.83	6.62	.00	1.83		
90116	.02	.00	.00	43.68	.24	.18	.28	1.79	6.48	1.97	6.76	.00	1.97		
90117	.04	.00	.00	44.04	.24	.20	.31	1.88	6.59	2.08	6.90	.00	2.08		
90118	.06	.00	.00	44.40	.24	.22	.33	1.93	6.71	2.15	7.05	.00	2.15		
90119	.13	.00	.00	44.76	.24	.24	.36	2.03	6.83	2.28	7.19	.00	2.28		
90120	.01	.00	.00	45.12	.24	.26	.39	2.09	6.94	2.36	7.34	.00	2.36		
90122	.07	.00	.00	45.66	.24	.31	.46	2.19	7.18	2.50	7.64	.00	2.50		
90124	.02	.00	.00	46.38	.23	.35	.53	2.27	7.42	2.63	7.94	.00	2.63		
90127	.01	.00	.00	47.27	.23	.41	.64	2.36	7.78	2.78	8.42	.00	2.78		
90128	.03	.00	.00	47.97	.23	.44	.68	2.39	7.90	2.82	8.58	.00	2.82		
90129	.07	.00	.00	48.32	.23	.46	.73	2.44	8.02	2.90	8.75	.00	2.90		
90130	.01	.00	.00	48.67	.23	.48	.77	2.48	8.14	2.96	8.91	.00	2.96		
90131	.03	.00	.00	49.02	.23	.50	.82	2.50	8.26	3.00	9.08	.00	3.00		
90132	.01	.00	.00	49.36	.23	.52	.87	2.53	8.39	3.05	9.25	.00	3.05		
90133	.31	.00	.00	49.70	.23	.55	.91	2.66	8.51	3.21	9.43	.00	3.21		
90134	.13	.00	.00	50.04	.23	.58	.97	2.76	8.64	3.34	9.60	.00	3.34		
90135	.17	.00	.00	50.38	.23	.61	1.02	2.89	8.76	3.50	9.78	.00	3.50		
90137	.21	.00	.00	50.89	.23	.67	1.13	3.03	9.01	3.70	10.14	.00	3.70		
90138	.12	.00	.00	51.39	.23	.71	1.18	3.13	9.14	3.83	10.32	.00	3.83		
90139	.03	.00	.00	51.72	.23	.74	1.24	3.25	9.26	3.99	10.51	.00	3.99		
90140	.90	.00	.00	52.04	.24	.79	1.30	3.38	9.39	4.17	10.69	.00	4.17		
90141	.01	.00	.00	52.37	.24	.85	1.37	3.49	9.52	4.34	10.88	.00	4.34		
90143	.11	.00	.00	52.85	.24	.95	1.50	3.69	9.77	4.64	11.27	.00	4.64		
90144	.03	.00	.00	53.32	.23	.99	1.57	3.78	9.90	4.78	11.46	.00	4.78		

90145	.15	.00	.00	53.63	.23	1.04	1.64	3.90	10.02	4.94	11.66	.00	4.94
90146	.01	.00	.00	53.94	.23	1.08	1.71	3.97	10.15	5.05	11.86	.00	5.05
90148	.02	.00	.00	54.40	.23	1.16	1.86	4.06	10.40	5.22	12.26	.00	5.22
90149	.24	.00	.00	54.85	.23	1.20	1.94	4.18	10.53	5.39	12.47	.00	5.39
90150	.55	.00	.00	55.14	.24	1.26	2.01	4.31	10.66	5.57	12.67	.00	5.57
90151	.26	.00	.00	55.44	.24	1.33	2.10	4.43	10.79	5.76	12.88	.00	5.76
90152	.01	.00	.00	55.72	.24	1.39	2.18	4.55	10.91	5.94	13.09	.00	5.94
90158	.05	.00	.00	56.69	.23	1.65	2.72	4.86	11.67	6.51	14.39	.00	6.51
90159	.01	.00	.00	57.63	.22	1.68	2.82	4.90	11.80	6.58	14.62	.00	6.58
90160	.20	.00	.00	57.88	.23	1.72	2.91	5.02	11.93	6.74	14.84	.00	6.74
90161	.01	.00	.00	58.13	.22	1.75	3.01	5.06	12.06	6.81	15.07	.00	6.81
90162	.01	.00	.00	58.38	.22	1.78	3.11	5.10	12.19	6.88	15.29	.00	6.88
90164	.02	.00	.00	58.74	.22	1.82	3.30	5.17	12.45	7.00	15.75	.00	7.00
90165	.15	.00	.00	59.09	.22	1.85	3.40	5.29	12.58	7.15	15.98	.00	7.15
90166	.29	.00	.00	59.32	.22	1.89	3.50	5.42	12.71	7.31	16.21	.00	7.31
90167	.28	.00	.00	59.54	.23	1.93	3.60	5.55	12.85	7.48	16.44	.00	7.48
90169	.02	.00	.00	59.86	.22	1.99	3.79	5.74	13.12	7.73	16.91	.00	7.73
90176	.13	.00	.00	60.76	.22	2.07	4.49	6.03	14.07	8.10	18.57	.00	8.10
90178	.01	.00	.00	61.56	.21	2.08	4.69	6.08	14.35	8.17	19.05	.00	8.17
90179	.02	.00	.00	61.81	.21	2.09	4.80	6.12	14.49	8.21	19.29	.00	8.21
90183	.18	.00	.00	62.18	.21	2.11	5.20	6.26	15.06	8.37	20.26	.00	8.37
90184	.01	.00	.00	62.52	.21	2.11	5.30	6.29	15.20	8.40	20.50	.00	8.40
90188	.05	.00	.00	62.82	.21	2.13	5.70	6.33	15.77	8.46	21.47	.00	8.46
90193	.01	.00	.00	63.26	.21	2.15	6.21	6.33	16.48	8.48	22.69	.00	8.48
90201	.01	.00	.00	63.69	.21	2.16	7.00	6.33	17.62	8.49	24.62	.00	8.49
90205	.02	.00	.00	63.87	.21	2.16	7.39	6.35	18.19	8.50	25.57	.00	8.50
90207	.28	.00	.00	63.87	.22	2.18	7.58	6.48	18.47	8.66	26.05	.00	8.66
90208	.01	.00	.00	63.85	.22	2.18	7.68	6.51	18.61	8.69	26.29	.00	8.69
90209	.01	.00	.00	63.83	.22	2.19	7.77	6.53	18.75	8.72	26.52	.00	8.72
90211	.02	.00	.00	63.79	.22	2.20	7.96	6.56	19.03	8.76	26.99	.00	8.76
90212	.55	.00	.00	63.73	.22	2.23	8.05	6.69	19.17	8.93	27.22	.00	8.93
90223	.45	.00	.00	63.33	.22	2.39	9.05	7.07	20.67	9.46	29.72	.00	9.46
90229	.08	.00	.00	62.46	.22	2.46	9.56	7.32	21.46	9.78	31.01	.00	9.78
90230	.35	.00	.00	61.97	.22	2.48	9.64	7.41	21.58	9.90	31.22	.00	9.90
90231	.24	.00	.00	61.82	.22	2.51	9.72	7.53	21.71	10.05	31.43	.00	10.05
90232	.11	.00	.00	61.66	.22	2.54	9.80	7.66	21.84	10.20	31.64	.00	10.20
90233	.03	.00	.00	61.50	.22	2.56	9.88	7.76	21.96	10.32	31.85	.00	10.32
90234	.07	.00	.00	61.33	.22	2.58	9.96	7.85	22.09	10.43	32.05	.00	10.43
90235	.12	.00	.00	61.15	.22	2.60	10.04	7.95	22.21	10.55	32.25	.00	10.55
90236	.02	.00	.00	60.97	.22	2.61	10.12	8.07	22.33	10.68	32.45	.00	10.68
90237	.35	.00	.00	60.79	.22	2.63	10.20	8.19	22.46	10.82	32.65	.00	10.82
90238	.11	.00	.00	60.59	.22	2.65	10.27	8.31	22.58	10.96	32.85	.00	10.96
90239	.06	.00	.00	60.40	.22	2.67	10.35	8.43	22.70	11.10	33.05	.00	11.10
90243	.01	.00	.00	59.88	.22	2.68	10.43	8.69	23.17	11.37	33.59	.00	11.37
90246	.01	.00	.00	59.11	.21	2.70	10.43	8.69	23.51	11.39	33.93	.00	11.39
90247	.07	.00	.00	58.64	.21	2.70	10.43	8.75	23.62	11.44	34.04	.00	11.44
90248	.09	.00	.00	58.40	.21	2.70	10.43	8.82	23.73	11.51	34.15	.00	11.51
90251	.20	.00	.00	57.90	.21	2.70	10.43	8.95	24.05	11.65	34.48	.00	11.65
90253	.08	.00	.00	57.26	.22	2.70	10.43	9.05	24.27	11.75	34.69	.00	11.75
90269	.01	.00	.00	54.69	.21	2.73	10.43	9.10	25.78	11.84	36.21	.00	11.84
90270	.04	.00	.00	52.07	.21	2.73	10.43	9.13	25.87	11.87	36.29	.00	11.87
90275	.05	.00	.00	51.08	.21	2.74	10.43	9.17	26.28	11.92	36.70	.00	11.92
90276	.02	.00	.00	50.08	.21	2.74	10.43	9.19	26.35	11.93	36.78	.00	11.93
90277	.02	.00	.00	49.74	.21	2.74	10.43	9.21	26.43	11.95	36.85	.00	11.95
90278	.03	.00	.00	49.39	.21	2.74	10.43	9.23	26.50	11.97	36.93	.00	11.97
90279	.01	.00	.00	49.05	.21	2.74	10.43	9.25	26.58	12.00	37.00	.00	12.00
90289	.12	.00	.00	47.12	.21	2.75	10.43	9.32	27.26	12.07	37.68	.00	12.07
90292	.03	.00	.00	44.80	.21	2.75	10.43	9.36	27.44	12.12	37.86	.00	12.12
90305	.02	.00	.00	41.91	.21	2.76	10.43	9.42	28.13	12.17	38.55	.00	12.17
90308	.07	.00	.00	39.03	.21	2.76	10.43	9.46	28.27	12.22	38.70	.00	12.22
90309	.24	.00	.00	38.32	.22	2.76	10.43	9.51	28.32	12.27	38.74	.00	12.27
90310	.02	.00	.00	37.97	.22	2.76	10.43	9.53	28.36	12.29	38.79	.00	12.29
90318	.25	.00	.00	36.40	.22	2.76	10.43	9.66	28.71	12.42	39.14	.00	12.42
90319	.03	.00	.00	34.86	.22	2.76	10.43	9.68	28.75	12.44	39.18	.00	12.44
90324	.12	.00	.00	33.87	.22	2.76	10.43	9.78	28.95	12.54	39.37	.00	12.54

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL = 13.380 IN
PRECIP., NET = 13.380 IN

PREDICTED RUNOFF = .474 IN
DEEP PERCOLATION = .000 IN
ACTUAL PLANT EVAP = 2.766 IN
ACTUAL SOIL EVAP = 10.140 IN
TOTAL ET = 12.906 IN
TOTAL INTERCEPTION= .000 IN
TOTAL INT PLUS ET = 12.906 IN
BEGIN SOIL WATER = .000 IN
FINAL SOIL WATER = .000 IN
IRRIGATION APPLIED= .000 IN
WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.01	.00	25.55	.21	.00	.00	.07	3.27	.07	3.27	.00	.07		
91084	.06	.00	.00	32.55	.22	.00	.00	.13	3.34	.13	3.34	.00	.13		
91085	.29	.06	.00	32.87	.22	.00	.00	.20	3.42	.20	3.42	.00	.20		
91086	.17	.02	.00	33.19	.22	.00	.00	.28	3.50	.28	3.50	.00	.28		
91087	.15	.02	.00	33.51	.22	.00	.00	.36	3.58	.36	3.58	.00	.36		
91088	.19	.03	.00	33.84	.22	.00	.00	.44	3.66	.44	3.66	.00	.44		
91089	.22	.04	.00	34.17	.22	.00	.00	.52	3.74	.52	3.74	.00	.52		
91090	.25	.05	.00	34.50	.23	.00	.00	.60	3.82	.60	3.82	.00	.60		
91091	.28	.07	.00	34.83	.23	.00	.00	.69	3.91	.69	3.91	.00	.69		
91092	.02	.00	.00	35.17	.23	.00	.00	.71	3.99	.71	3.99	.00	.71		
91093	.02	.00	.00	35.51	.23	.00	.00	.72	4.08	.72	4.08	.00	.72		
91094	.05	.00	.00	35.85	.23	.00	.01	.76	4.17	.77	4.18	.00	.77		
91096	.21	.04	.00	36.36	.23	.01	.01	.87	4.35	.87	4.37	.00	.87		
91100	.02	.00	.00	37.41	.23	.02	.03	.92	4.74	.94	4.77	.00	.94		
91102	.01	.00	.00	38.46	.23	.02	.05	.95	4.94	.98	4.99	.00	.98		
91105	.05	.00	.00	39.35	.23	.04	.08	1.02	5.26	1.05	5.34	.00	1.05		
91106	.05	.00	.00	40.07	.23	.04	.09	1.06	5.37	1.10	5.46	.00	1.10		
91107	.10	.00	.00	40.43	.23	.05	.10	1.14	5.48	1.18	5.58	.00	1.18		
91108	.03	.00	.00	40.79	.23	.05	.12	1.16	5.59	1.21	5.70	.00	1.21		
91109	.03	.00	.00	41.15	.23	.06	.13	1.18	5.70	1.25	5.83	.00	1.25		
91116	.01	.00	.00	42.59	.23	.11	.25	1.28	6.51	1.39	6.76	.00	1.39		
91119	.05	.00	.00	44.40	.23	.14	.32	1.34	6.87	1.47	7.19	.00	1.47		
91120	.09	.00	.00	45.12	.23	.14	.34	1.41	6.99	1.55	7.33	.00	1.55		
91121	.01	.00	.00	45.48	.23	.15	.37	1.43	7.11	1.58	7.48	.00	1.58		
91123	.02	.00	.00	46.02	.23	.17	.42	1.46	7.36	1.63	7.78	.00	1.63		
91128	.12	.00	.00	47.26	.22	.22	.57	1.59	8.00	1.81	8.58	.00	1.81		
91129	.22	.00	.00	48.32	.23	.23	.60	1.73	8.14	1.96	8.74	.00	1.96		
91130	.25	.00	.00	48.67	.23	.25	.64	1.86	8.27	2.11	8.90	.00	2.11		
91131	.37	.00	.00	49.02	.23	.27	.67	1.99	8.40	2.26	9.07	.00	2.26		
91132	.01	.00	.00	49.36	.23	.29	.71	2.02	8.53	2.31	9.24	.00	2.31		
91134	.21	.00	.00	49.87	.23	.33	.79	2.18	8.80	2.51	9.59	.00	2.51		
91137	.16	.00	.00	50.72	.23	.39	.91	2.35	9.21	2.75	10.12	.00	2.75		
91138	.55	.00	.00	51.39	.24	.43	.96	2.49	9.34	2.92	10.30	.00	2.92		
91139	.38	.00	.00	51.72	.24	.47	1.01	2.63	9.48	3.10	10.48	.00	3.10		
91140	.02	.00	.00	52.04	.24	.51	1.05	2.75	9.62	3.26	10.67	.00	3.26		
91141	.01	.00	.00	52.37	.24	.55	1.10	2.87	9.75	3.41	10.86	.00	3.41		
91145	.25	.00	.00	53.16	.23	.68	1.32	3.13	10.30	3.81	11.62	.00	3.81		
91147	.28	.00	.00	54.09	.23	.75	1.44	3.30	10.58	4.05	12.02	.00	4.05		
91148	.01	.00	.00	54.55	.23	.79	1.51	3.41	10.71	4.19	12.22	.00	4.19		
91149	.02	.00	.00	54.85	.23	.82	1.57	3.48	10.85	4.30	12.42	.00	4.30		
91150	.12	.00	.00	55.14	.23	.85	1.64	3.58	10.99	4.43	12.63	.00	4.43		
91151	.03	.00	.00	55.44	.23	.88	1.71	3.65	11.13	4.53	12.83	.00	4.53		
91154	.03	.00	.00	56.01	.23	.96	1.92	3.78	11.54	4.74	13.46	.00	4.74		
91155	.12	.00	.00	56.56	.22	.98	1.99	3.88	11.68	4.86	13.67	.00	4.86		
91156	.57	.00	.00	56.84	.23	1.03	2.07	4.01	11.82	5.04	13.89	.00	5.04		
91157	.15	.00	.00	57.10	.23	1.07	2.14	4.15	11.96	5.23	14.10	.00	5.23		
91158	.12	.00	.00	57.37	.23	1.12	2.22	4.29	12.10	5.41	14.32	.00	5.41		
91159	.01	.00	.00	57.63	.23	1.15	2.30	4.40	12.24	5.55	14.54	.00	5.55		
91171	.91	.00	.00	59.17	.22	1.37	3.28	4.93	13.97	6.30	17.25	.00	6.30		
91173	.03	.00	.00	60.67	.23	1.44	3.45	5.17	14.27	6.61	17.71	.00	6.61		
91174	.02	.00	.00	60.95	.22	1.47	3.53	5.24	14.42	6.71	17.95	.00	6.71		
91175	.02	.00	.00	61.14	.22	1.49	3.61	5.30	14.57	6.79	18.18	.00	6.79		
91176	.03	.00	.00	61.31	.22	1.51	3.70	5.36	14.72	6.87	18.42	.00	6.87		
91177	.01	.00	.00	61.48	.22	1.53	3.78	5.40	14.87	6.93	18.65	.00	6.93		
91179	.11	.00	.00	61.73	.22	1.56	3.95	5.52	15.18	7.08	19.12	.00	7.08		

JUL	.490	.490	.000	.699	.000	10.289	.000
AUG	1.350	1.350	.000	.878	.000	10.351	.000
SEP	1.420	1.420	.000	1.356	.000	10.881	.000
OCT	1.070	1.070	.000	.795	.000	10.702	.000
NOV	.960	.960	.000	1.173	.000	11.047	.000
DEC	.000	.000	.000	.423	.000	10.616	.000
TOT	13.010	13.010	.343	12.492	.000	10.623	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.147	.000	12.006	.000
FEB	.000	.000	.000	.152	.000	11.849	.000
MAR	1.278	1.278	.206	.637	.000	11.786	.000
APR	2.545	2.545	.565	1.738	.000	12.572	.000
MAY	2.673	2.673	.000	3.211	.000	12.139	.000
JUN	1.437	1.437	.000	2.902	.000	11.011	.000
JUL	.903	.903	.000	.903	.000	10.315	.000
AUG	1.843	1.843	.000	1.724	.000	10.438	.000
SEP	.740	.740	.000	.866	.000	10.537	.000
OCT	.737	.737	.000	.613	.000	10.446	.000
NOV	.627	.627	.000	.670	.000	10.606	.000
DEC	.000	.000	.000	.212	.000	10.398	.000
TOT	12.783	12.783	.771	13.773	.000	11.175	.000

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SNOW NOTICE
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DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf02ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

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CARD   1:SILVER BOW CREEK RI/FS
CARD   2:RAMSAY FLATS CONTROL PLOT
CARD   3:1989-1991
CARD   4:      89      91       2       1       0
CARD   5:    .200    .500    .300 100.0002000.000
CARD   6:       2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:       1   1.000    .450
CARD  14:       3
CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  16:       1   1.000
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.05
2	.010	2.65	.14
3	.030	1.80	.36
4	.400	1.60	.35
5	.200	2.65	.10

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600	ACRES
SLOPE LENGTH	1450.00	FT
AVERAGE SLOPE	.0199	

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.450

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .26 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .39 TONS/ACRE
ENRICHMENT RATIO 1.012

MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED 1.32 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 3.00 TONS/ACRE
ENRICHMENT RATIO 1.000

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
13 STORMS PRODUCED 1.58 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 3.39 TONS/ACRE
ENRICHMENT RATIO 1.001

MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
5 STORMS PRODUCED .14 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .20 TONS/ACRE
ENRICHMENT RATIO 1.029

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
4 STORMS PRODUCED .36 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .65 TONS/ACRE
ENRICHMENT RATIO 1.002

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
9 STORMS PRODUCED .50 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .85 TONS/ACRE
ENRICHMENT RATIO 1.009

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .24 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .35 TONS/ACRE
ENRICHMENT RATIO 1.023

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .12 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .18 TONS/ACRE
ENRICHMENT RATIO 1.009

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1991
----

11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991
----

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991
----

94 STORMS PRODUCED 13.01 IN. OF RAINFALL
9 STORMS PRODUCED .36 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .54 TONS/ACRE
ENRICHMENT RATIO 1.018

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991

STORM SUMMARY
----

314 STORMS PRODUCED 38.35 IN. OF RAINFALL
31 STORMS PRODUCED 2.44 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.05	11481.	.0565	.0009	906.
2	.14	30885.	.1520	.0024	2436.
3	.36	79429.	.3910	.0063	6265.
4	.35	76443.	.3763	.0060	6030.
5	.10	20952.	.1031	.0017	1653.
TOTAL		219190.	1.0789	.0173	17290.

TOTAL SOIL LOSS FOR AREA 4.77 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES

AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.201
SILT	.502
SAND	.297
ORGANIC MATTER	.005

INDEX OF SPECIFIC SURFACE 27.81 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.005

GLEAMS HYDROLOGY/EROSION OUTPUT

RF03

HYDROLOGY INPUT PARAMETER FILENAME: rf03.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
RAMSAY FLATS CONTROL PLOT SIMULATION
1989-1991 (SHALLOW, LOW SOIL EVAP)

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	70	.00
0	1	99	.05
0	1	129	.10
0	1	277	.10
0	1	306	.15
0	1	336	.08
0	1	366	.00
0	2	70	.00
0	2	99	.05
0	2	129	.10
0	2	277	.10
0	2	306	.15
0	2	336	.08
0	2	366	.00
0	3	70	.00
0	3	99	.05
0	3	129	.10
0	3	277	.10
0	3	306	.15
0	3	336	.08
0	3	366	.00

FIELD AREA	=	22.960 ACRES
ROOTING DEPTH	=	12.000 IN
SATURATED CONDUCTIVITY	=	.071 IN/HR
AVG. FUL	=	.600
AVG. FIELD CAPACITY	=	.480 IN/IN
INITIAL STORAGE FRACTION	=	.850
EVAPORATION COEFFICIENT	=	3.080
AVERAGE POROSITY	=	.600 CC/CC
SCS CURVE NUMBER	=	92.000
CHANNEL SLOPE	=	.015 FT/FT
WATERSHED LEN/WIDTH RATIO	=	1.000
PEAK FLOW RATE COEFFICIENT	=	39.019
PEAK FLOW RATE EXPONENT	=	.868
UPPER LIMIT OF STORAGE	=	3.600 IN
AVG. 15-BAR WATER CONTENT	=	.300 IN/IN
INITIAL SOIL WATER STORAGE	=	1.836 IN
FRAC. P.A.W. TO BEGIN IRR.	=	.000
FRAC. P.A.W. TO END IRR.	=	.000

UPPER LIMIT OF STORAGES, IN

.118	1.161	1.161	1.161

INITIAL PLANT AVAILABLE STORAGE, IN
.060 .592 .592 .592

POROSITY BY LAYER (CC/CC)
.600 .600 .600 .600

FUL BY LAYER (IN/IN)
.600 .600 .600 .600

FEILD CAPACITY BY LAYER (IN/IN)
.480 .480 .480 .480

FIELD CAPACITY BY LAYER (IN)
.189 1.857 1.857 1.857

15-BAR WATER CONTENT BY LAYER (IN/IN)
.300 .300 .300 .300

WATER CONTENT AT WILT. PT. BY LAYER (IN)
.118 1.161 1.161 1.161

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.40	.00	.00	1.05	1.82	1.06	1.82	.00	1.06		
89084	.05	.00	.00	32.55	.37	.00	.00	1.10	1.86	1.10	1.86	.00	1.10		
89085	.17	.04	.00	32.87	.37	.01	.01	1.14	1.90	1.14	1.90	.00	1.14		
89086	.12	.02	.00	33.19	.38	.01	.01	1.22	1.98	1.22	1.98	.00	1.22		
89087	.20	.06	.00	33.51	.38	.01	.01	1.29	2.06	1.30	2.06	.00	1.30		
89088	.19	.06	.00	33.84	.39	.01	.01	1.38	2.14	1.38	2.14	.00	1.38		
89089	.23	.08	.00	34.17	.39	.01	.01	1.46	2.22	1.47	2.23	.00	1.47		
89090	.26	.10	.00	34.50	.40	.01	.01	1.54	2.30	1.55	2.31	.00	1.55		
89091	.28	.12	.00	34.83	.40	.01	.01	1.63	2.39	1.64	2.40	.00	1.64		
89092	.37	.18	.00	35.17	.41	.01	.01	1.71	2.47	1.72	2.49	.00	1.72		
89093	.36	.19	.00	35.51	.42	.01	.01	1.80	2.56	1.81	2.58	.00	1.81		
89094	.38	.21	.00	35.85	.43	.02	.02	1.89	2.65	1.91	2.67	.00	1.91		
89095	.42	.25	.00	36.19	.43	.02	.02	1.98	2.74	2.00	2.76	.00	2.00		
89096	.45	.29	.00	36.54	.44	.02	.02	2.06	2.84	2.08	2.85	.00	2.08		
89097	.49	.32	.00	36.88	.45	.02	.02	2.16	2.93	2.18	2.95	.00	2.18		
89098	.05	.00	.00	37.23	.44	.02	.02	2.25	3.03	2.27	3.05	.00	2.27		
89099	.05	.00	.00	37.58	.44	.02	.02	2.32	3.12	2.34	3.15	.00	2.34		
89100	.01	.00	.00	37.93	.43	.03	.03	2.42	3.22	2.44	3.25	.00	2.44		
89106	.05	.00	.00	39.17	.42	.04	.04	2.63	3.85	2.67	3.89	.00	2.67		
89107	.15	.00	.00	40.43	.42	.04	.04	2.74	3.96	2.78	4.00	.00	2.78		
89111	.01	.00	.00	41.33	.42	.05	.05	2.85	4.42	2.90	4.48	.00	2.90		
89112	.10	.00	.00	42.23	.41	.06	.06	2.93	4.54	2.99	4.60	.00	2.99		
89113	.18	.00	.00	42.59	.42	.06	.06	3.05	4.66	3.11	4.72	.00	3.11		
89114	.13	.00	.00	42.96	.42	.06	.06	3.16	4.79	3.22	4.85	.00	3.22		
89115	.03	.00	.00	43.32	.42	.07	.07	3.22	4.91	3.28	4.98	.00	3.28		
89117	.19	.00	.00	43.86	.42	.07	.07	3.37	5.17	3.44	5.24	.00	3.44		
89118	.02	.00	.00	44.40	.42	.08	.08	3.42	5.30	3.50	5.37	.00	3.50		
89119	.01	.00	.00	44.76	.41	.08	.08	3.46	5.43	3.54	5.51	.00	3.54		
89122	.02	.00	.00	45.48	.41	.09	.09	3.54	5.84	3.64	5.93	.00	3.64		
89127	.02	.00	.00	46.91	.40	.12	.12	3.65	6.55	3.77	6.67	.00	3.77		
89128	.06	.00	.00	47.97	.40	.12	.12	3.70	6.70	3.83	6.82	.00	3.83		
89129	.02	.00	.00	48.32	.40	.13	.13	3.74	6.85	3.87	6.98	.00	3.87		
89130	.01	.00	.00	48.67	.39	.14	.14	3.77	7.00	3.90	7.13	.00	3.90		
89131	.15	.00	.00	49.02	.40	.14	.14	3.89	7.15	4.03	7.29	.00	4.03		
89132	.01	.00	.00	49.36	.39	.15	.15	3.91	7.30	4.06	7.45	.00	4.06		
89133	.10	.00	.00	49.70	.40	.15	.15	3.99	7.46	4.14	7.61	.00	4.14		
89134	.01	.00	.00	50.04	.39	.16	.16	4.02	7.62	4.18	7.78	.00	4.18		
89135	.13	.00	.00	50.38	.40	.16	.16	4.12	7.78	4.29	7.94	.00	4.29		
89136	.01	.00	.00	50.72	.39	.17	.17	4.15	7.94	4.32	8.11	.00	4.32		
89138	.17	.00	.00	51.22	.39	.18	.18	4.30	8.27	4.48	8.45	.00	4.48		
89139	.01	.00	.00	51.72	.39	.19	.19	4.33	8.44	4.52	8.62	.00	4.52		
89143	.01	.00	.00	52.53	.39	.21	.21	4.40	9.12	4.61	9.33	.00	4.61		
89144	.04	.00	.00	53.32	.39	.22	.22	4.43	9.29	4.65	9.51	.00	4.65		
89145	.01	.00	.00	53.63	.38	.23	.23	4.46	9.47	4.68	9.69	.00	4.68		
89148	.50	.00	.00	54.25	.39	.25	.25	4.66	10.00	4.91	10.25	.00	4.91		

89149	.20	.00	.00	54.85	.41	.25	.25	4.82	10.19	5.08	10.44	.00	5.08
89153	.01	.00	.00	55.58	.40	.28	.28	4.96	10.93	5.24	11.21	.00	5.24
89154	.02	.00	.00	56.29	.39	.29	.29	5.00	11.12	5.29	11.40	.00	5.29
89161	.17	.00	.00	57.36	.39	.34	.34	5.25	12.47	5.59	12.81	.00	5.59
89166	.25	.00	.00	58.85	.38	.38	.38	5.52	13.47	5.89	13.84	.00	5.89
89167	.31	.00	.00	59.54	.39	.38	.38	5.72	13.67	6.10	14.06	.00	6.10
89168	.01	.00	.00	59.76	.38	.39	.39	5.75	13.88	6.14	14.27	.00	6.14
89171	.09	.00	.00	60.17	.38	.41	.41	5.87	14.49	6.28	14.91	.00	6.28
89175	.03	.00	.00	60.86	.38	.44	.44	5.95	15.32	6.39	15.77	.00	6.39
89178	.03	.00	.00	61.48	.37	.47	.47	6.01	15.96	6.47	16.42	.00	6.47
89193	.03	.00	.00	62.71	.35	.59	.59	6.22	19.15	6.81	19.74	.00	6.81
89194	.12	.00	.00	63.50	.35	.59	.59	6.32	19.37	6.91	19.96	.00	6.91
89197	.06	.00	.00	63.62	.34	.62	.62	6.39	20.01	7.01	20.62	.00	7.01
89198	.09	.00	.00	63.73	.34	.62	.62	6.46	20.22	7.09	20.84	.00	7.09
89203	.12	.00	.00	63.82	.34	.66	.66	6.60	21.28	7.27	21.94	.00	7.27
89204	.02	.00	.00	63.88	.34	.67	.67	6.62	21.49	7.29	22.16	.00	7.29
89205	.12	.00	.00	63.88	.34	.68	.68	6.72	21.70	7.39	22.38	.00	7.39
89208	.35	.00	.00	63.87	.34	.70	.70	6.95	22.33	7.65	23.03	.00	7.65
89209	.07	.00	.00	63.83	.35	.70	.71	7.01	22.53	7.71	23.24	.00	7.71
89211	.07	.00	.00	63.79	.35	.72	.73	7.08	22.95	7.80	23.67	.00	7.80
89212	.02	.00	.00	63.73	.35	.73	.73	7.09	23.15	7.82	23.89	.00	7.82
89213	.10	.00	.00	63.68	.35	.74	.74	7.17	23.36	7.91	24.10	.00	7.91
89220	.08	.00	.00	63.42	.34	.78	.79	7.33	24.77	8.11	25.56	.00	8.11
89221	.12	.00	.00	63.09	.34	.79	.80	7.42	24.96	8.22	25.76	.00	8.22
89223	.20	.00	.00	62.94	.34	.80	.81	7.60	25.35	8.40	26.17	.00	8.40
89224	.03	.00	.00	62.77	.34	.81	.82	7.62	25.55	8.43	26.37	.00	8.43
89225	.03	.00	.00	62.65	.34	.82	.83	7.65	25.74	8.47	26.57	.00	8.47
89230	.02	.00	.00	62.26	.33	.85	.86	7.72	26.68	8.57	27.55	.00	8.57
89231	.01	.00	.00	61.82	.33	.85	.87	7.75	26.87	8.60	27.74	.00	8.60
89232	.05	.00	.00	61.66	.33	.86	.88	7.79	27.05	8.64	27.93	.00	8.64
89233	.02	.00	.00	61.50	.33	.86	.88	7.80	27.23	8.67	28.12	.00	8.67
89235	.80	.05	.00	61.24	.35	.87	.90	7.97	27.59	8.85	28.49	.00	8.85
89236	.45	.02	.00	60.97	.40	.88	.90	8.13	27.77	9.01	28.68	.00	9.01
89237	.06	.00	.00	60.79	.40	.89	.91	8.25	27.95	9.13	28.86	.00	9.13
89238	.01	.00	.00	60.59	.39	.89	.92	8.32	28.12	9.21	29.04	.00	9.21
89239	.08	.00	.00	60.40	.39	.90	.92	8.38	28.30	9.28	29.22	.00	9.28
89240	.02	.00	.00	60.20	.39	.91	.93	8.45	28.47	9.35	29.40	.00	9.35
89241	.01	.00	.00	59.99	.38	.91	.94	8.50	28.64	9.41	29.57	.00	9.41
89242	.01	.00	.00	59.78	.38	.92	.94	8.54	28.81	9.45	29.75	.00	9.45
89243	.08	.00	.00	59.56	.38	.92	.95	8.60	28.97	9.52	29.92	.00	9.52
89245	.01	.00	.00	59.22	.38	.94	.96	8.67	29.30	9.60	30.26	.00	9.60
89252	.03	.00	.00	58.15	.37	.98	1.00	8.82	30.40	9.79	31.40	.00	9.79
89253	.02	.00	.00	57.13	.36	.98	1.01	8.85	30.55	9.84	31.56	.00	9.84
89260	.12	.00	.00	56.03	.35	1.02	1.04	9.04	31.55	10.06	32.59	.00	10.06
89262	.12	.00	.00	54.73	.35	1.03	1.05	9.15	31.82	10.18	32.87	.00	10.18
89274	.22	.00	.00	52.54	.34	1.07	1.09	9.41	33.29	10.48	34.38	.00	10.48
89275	.10	.00	.00	50.42	.35	1.07	1.09	9.49	33.40	10.56	34.49	.00	10.56
89276	.01	.00	.00	50.08	.34	1.07	1.09	9.52	33.51	10.58	34.60	.00	10.58
89277	.10	.00	.00	49.74	.35	1.07	1.09	9.60	33.62	10.66	34.71	.00	10.66
89279	.05	.00	.00	49.22	.35	1.07	1.09	9.65	33.83	10.72	34.92	.00	10.72
89284	.02	.00	.00	48.00	.34	1.07	1.09	9.72	34.32	10.79	35.41	.00	10.79
89285	.02	.00	.00	46.95	.34	1.07	1.09	9.74	34.41	10.80	35.51	.00	10.80
89297	.02	.00	.00	44.61	.34	1.07	1.09	9.89	35.41	10.95	36.51	.00	10.95
89298	.06	.00	.00	42.27	.33	1.07	1.09	9.93	35.49	11.00	36.58	.00	11.00
89299	.01	.00	.00	41.90	.33	1.07	1.09	9.95	35.56	11.02	36.65	.00	11.02
89300	.02	.00	.00	41.54	.33	1.07	1.09	9.97	35.63	11.03	36.72	.00	11.03
89301	.06	.00	.00	41.18	.33	1.07	1.09	10.02	35.70	11.08	36.79	.00	11.08
89304	.17	.00	.00	40.46	.33	1.07	1.09	10.11	35.90	11.17	36.99	.00	11.17
89307	.02	.00	.00	39.39	.34	1.07	1.09	10.15	36.09	11.21	37.18	.00	11.21
89308	.01	.00	.00	38.67	.34	1.07	1.09	10.17	36.15	11.23	37.24	.00	11.23
89309	.02	.00	.00	38.32	.34	1.07	1.09	10.18	36.21	11.25	37.30	.00	11.25
89311	.01	.00	.00	37.79	.34	1.07	1.09	10.22	36.32	11.28	37.41	.00	11.28
89312	.01	.00	.00	37.26	.33	1.07	1.09	10.24	36.38	11.30	37.47	.00	11.30
89317	.02	.00	.00	36.23	.33	1.07	1.09	10.30	36.64	11.36	37.73	.00	11.36
89318	.04	.00	.00	35.20	.33	1.07	1.09	10.33	36.69	11.40	37.78	.00	11.40
89319	.03	.00	.00	34.86	.33	1.07	1.09	10.36	36.73	11.42	37.82	.00	11.42
89321	.01	.00	.00	34.36	.33	1.07	1.09	10.39	36.83	11.45	37.92	.00	11.45

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	1.982 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	1.070 IN
ACTUAL SOIL EVAP	=	10.743 IN
TOTAL ET	=	11.814 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	11.814 IN
BEGIN SOIL WATER	=	1.836 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.30	.00	.00	.04	3.27	.04	3.27	.00	.04		
90084	.05	.00	.00	32.55	.30	.00	.00	.09	3.34	.09	3.34	.00	.09		
90085	.09	.01	.00	32.87	.30	.00	.00	.15	3.42	.15	3.42	.00	.15		
90086	.12	.02	.00	33.19	.30	.00	.00	.22	3.50	.22	3.50	.00	.22		
90087	.15	.03	.00	33.51	.31	.00	.00	.30	3.58	.30	3.58	.00	.30		
90088	.18	.05	.00	33.84	.31	.00	.00	.38	3.66	.38	3.66	.00	.38		
90089	.22	.07	.00	34.17	.32	.00	.00	.47	3.74	.47	3.74	.00	.47		
90090	.25	.09	.00	34.50	.33	.00	.00	.55	3.82	.55	3.82	.00	.55		
90091	.28	.11	.00	34.83	.33	.00	.00	.63	3.91	.64	3.91	.00	.64		
90092	.32	.14	.00	35.17	.34	.00	.00	.72	3.99	.72	3.99	.00	.72		
90093	.35	.17	.00	35.51	.35	.00	.00	.81	4.08	.81	4.08	.00	.81		
90094	.32	.15	.00	35.85	.36	.00	.00	.90	4.17	.90	4.17	.00	.90		
90102	.08	.00	.00	37.41	.35	.01	.01	1.02	4.94	1.03	4.95	.00	1.03		
90104	.20	.00	.00	39.17	.35	.01	.01	1.13	5.15	1.14	5.16	.00	1.14		
90105	.02	.00	.00	39.71	.36	.01	.01	1.15	5.26	1.16	5.27	.00	1.16		
90108	.09	.00	.00	40.43	.36	.01	.01	1.24	5.59	1.25	5.61	.00	1.25		
90112	.14	.00	.00	41.69	.36	.02	.02	1.38	6.06	1.40	6.08	.00	1.40		
90113	.03	.00	.00	42.59	.36	.02	.02	1.40	6.18	1.42	6.20	.00	1.42		
90114	.77	.15	.00	42.96	.40	.02	.02	1.53	6.31	1.55	6.33	.00	1.55		
90115	.01	.00	.00	43.32	.40	.03	.03	1.56	6.43	1.58	6.46	.00	1.58		
90116	.02	.00	.00	43.68	.40	.03	.03	1.60	6.56	1.63	6.59	.00	1.63		
90117	.04	.00	.00	44.04	.40	.03	.03	1.63	6.69	1.66	6.72	.00	1.66		
90118	.06	.00	.00	44.40	.40	.03	.03	1.68	6.82	1.71	6.85	.00	1.71		
90119	.13	.00	.00	44.76	.40	.03	.03	1.78	6.95	1.82	6.98	.00	1.82		
90120	.01	.00	.00	45.12	.40	.04	.04	1.82	7.08	1.85	7.12	.00	1.85		
90122	.07	.00	.00	45.66	.39	.04	.04	1.89	7.35	1.94	7.40	.00	1.94		
90124	.02	.00	.00	46.38	.39	.05	.05	1.96	7.63	2.00	7.68	.00	2.00		
90127	.01	.00	.00	47.27	.39	.06	.06	2.02	8.07	2.08	8.13	.00	2.08		
90128	.03	.00	.00	47.97	.39	.06	.06	2.04	8.22	2.11	8.28	.00	2.11		
90129	.07	.00	.00	48.32	.39	.07	.07	2.10	8.37	2.17	8.43	.00	2.17		
90130	.01	.00	.00	48.67	.39	.07	.07	2.13	8.52	2.20	8.59	.00	2.20		
90131	.03	.00	.00	49.02	.39	.07	.07	2.15	8.67	2.22	8.74	.00	2.22		
90132	.01	.00	.00	49.36	.38	.08	.08	2.18	8.82	2.26	8.90	.00	2.26		
90133	.31	.00	.00	49.70	.40	.08	.08	2.33	8.98	2.42	9.06	.00	2.42		
90134	.13	.00	.00	50.04	.40	.09	.09	2.44	9.14	2.52	9.22	.00	2.52		
90135	.17	.00	.00	50.38	.40	.09	.09	2.57	9.30	2.66	9.39	.00	2.66		
90137	.21	.00	.00	50.89	.40	.10	.10	2.77	9.62	2.87	9.72	.00	2.87		
90138	.12	.00	.00	51.39	.40	.10	.10	2.86	9.79	2.97	9.89	.00	2.97		
90139	.03	.00	.00	51.72	.40	.11	.11	2.93	9.95	3.04	10.06	.00	3.04		
90140	.90	.27	.00	52.04	.44	.11	.11	3.08	10.12	3.19	10.23	.00	3.19		
90141	.01	.00	.00	52.37	.43	.12	.12	3.19	10.29	3.30	10.41	.00	3.30		
90143	.11	.00	.00	52.85	.43	.12	.12	3.32	10.64	3.45	10.76	.00	3.45		
90144	.03	.00	.00	53.32	.42	.13	.13	3.40	10.81	3.52	10.94	.00	3.52		
90145	.15	.00	.00	53.63	.43	.13	.13	3.52	10.99	3.65	11.12	.00	3.65		
90146	.01	.00	.00	53.94	.42	.14	.14	3.57	11.16	3.70	11.30	.00	3.70		
90148	.02	.00	.00	54.40	.42	.15	.15	3.65	11.52	3.79	11.67	.00	3.79		
90149	.24	.00	.00	54.85	.42	.15	.15	3.83	11.71	3.98	11.86	.00	3.98		
90150	.55	.06	.00	55.14	.45	.16	.16	3.99	11.89	4.14	12.04	.00	4.14		
90151	.26	.00	.00	55.44	.46	.16	.16	4.15	12.07	4.31	12.23	.00	4.31		
90152	.01	.00	.00	55.72	.45	.16	.16	4.25	12.26	4.41	12.42	.00	4.41		
90158	.05	.00	.00	56.69	.44	.19	.19	4.46	13.40	4.65	13.59	.00	4.65		
90159	.01	.00	.00	57.63	.43	.20	.20	4.50	13.60	4.69	13.79	.00	4.69		
90160	.20	.00	.00	57.88	.43	.20	.20	4.66	13.79	4.86	14.00	.00	4.86		

90161	.01	.00	.00	58.13	.43	.21	.21	4.69	13.99	4.90	14.20	.00	4.90
90162	.01	.00	.00	58.38	.43	.21	.21	4.72	14.19	4.94	14.40	.00	4.94
90164	.02	.00	.00	58.74	.42	.22	.22	4.79	14.59	5.01	14.81	.00	5.01
90165	.15	.00	.00	59.09	.43	.23	.23	4.91	14.79	5.14	15.02	.00	5.14
90166	.29	.00	.00	59.32	.43	.23	.23	5.11	14.99	5.34	15.22	.00	5.34
90167	.28	.00	.00	59.54	.44	.24	.24	5.24	15.19	5.48	15.43	.00	5.48
90169	.02	.00	.00	59.86	.44	.25	.25	5.36	15.60	5.61	15.85	.00	5.61
90176	.13	.00	.00	60.76	.42	.29	.29	5.62	17.05	5.91	17.34	.00	5.91
90178	.01	.00	.00	61.56	.42	.30	.30	5.68	17.47	5.97	17.77	.00	5.97
90179	.02	.00	.00	61.81	.41	.30	.30	5.71	17.69	6.02	17.99	.00	6.02
90183	.18	.00	.00	62.18	.41	.32	.32	5.91	18.53	6.23	18.86	.00	6.23
90184	.01	.00	.00	62.52	.41	.33	.33	5.94	18.75	6.27	19.08	.00	6.27
90188	.05	.00	.00	62.82	.41	.35	.35	6.03	19.60	6.38	19.95	.00	6.38
90193	.01	.00	.00	63.26	.40	.38	.38	6.11	20.67	6.49	21.05	.00	6.49
90201	.01	.00	.00	63.69	.39	.42	.42	6.22	22.37	6.64	22.79	.00	6.64
90205	.02	.00	.00	63.87	.38	.44	.44	6.27	23.22	6.71	23.66	.00	6.71
90207	.28	.00	.00	63.87	.38	.45	.45	6.49	23.64	6.94	24.09	.00	6.94
90208	.01	.00	.00	63.85	.38	.46	.46	6.51	23.85	6.97	24.30	.00	6.97
90209	.01	.00	.00	63.83	.38	.46	.46	6.53	24.05	7.00	24.52	.00	7.00
90211	.02	.00	.00	63.79	.38	.47	.47	6.56	24.47	7.03	24.94	.00	7.03
90212	.55	.01	.00	63.73	.41	.48	.48	6.77	24.67	7.24	25.15	.00	7.24
90223	.45	.00	.00	63.33	.40	.53	.53	7.15	26.87	7.68	27.41	.00	7.68
90229	.08	.00	.00	62.46	.40	.56	.56	7.33	28.02	7.89	28.58	.00	7.89
90230	.35	.00	.00	61.97	.42	.57	.57	7.45	28.20	8.01	28.77	.00	8.01
90231	.24	.00	.00	61.82	.42	.57	.57	7.61	28.39	8.18	28.96	.00	8.18
90232	.11	.00	.00	61.66	.42	.58	.58	7.75	28.57	8.32	29.15	.00	8.32
90233	.03	.00	.00	61.50	.41	.58	.58	7.85	28.75	8.43	29.33	.00	8.43
90234	.07	.00	.00	61.33	.41	.58	.58	7.90	28.93	8.49	29.52	.00	8.49
90235	.12	.00	.00	61.15	.42	.59	.59	8.00	29.11	8.59	29.70	.00	8.59
90236	.02	.00	.00	60.97	.41	.59	.59	8.08	29.29	8.67	29.88	.00	8.67
90237	.35	.00	.00	60.79	.43	.60	.60	8.23	29.47	8.83	30.06	.00	8.83
90238	.11	.00	.00	60.59	.42	.60	.60	8.37	29.64	8.97	30.24	.00	8.97
90239	.06	.00	.00	60.40	.42	.61	.61	8.47	29.81	9.08	30.42	.00	9.08
90243	.01	.00	.00	59.88	.41	.62	.62	8.64	30.49	9.27	31.12	.00	9.27
90246	.01	.00	.00	59.11	.40	.64	.64	8.73	30.98	9.36	31.62	.00	9.36
90247	.07	.00	.00	58.64	.40	.64	.64	8.78	31.14	9.42	31.78	.00	9.42
90248	.09	.00	.00	58.40	.40	.64	.64	8.85	31.30	9.50	31.95	.00	9.50
90251	.20	.00	.00	57.90	.40	.66	.66	9.05	31.77	9.71	32.42	.00	9.71
90253	.08	.00	.00	57.26	.40	.66	.66	9.14	32.07	9.80	32.73	.00	9.80
90269	.01	.00	.00	54.69	.38	.72	.72	9.42	34.23	10.13	34.95	.00	10.13
90270	.04	.00	.00	52.07	.37	.72	.72	9.45	34.35	10.17	35.07	.00	10.17
90275	.05	.00	.00	51.08	.37	.72	.72	9.54	34.92	10.26	35.64	.00	10.26
90276	.02	.00	.00	50.08	.37	.72	.72	9.55	35.03	10.27	35.75	.00	10.27
90277	.02	.00	.00	49.74	.37	.72	.72	9.57	35.14	10.29	35.86	.00	10.29
90278	.03	.00	.00	49.39	.37	.72	.72	9.59	35.24	10.31	35.96	.00	10.31
90279	.01	.00	.00	49.05	.37	.72	.72	9.62	35.35	10.34	36.07	.00	10.34
90289	.12	.00	.00	47.12	.36	.72	.72	9.80	36.29	10.52	37.01	.00	10.52
90292	.03	.00	.00	44.80	.36	.72	.72	9.85	36.54	10.57	37.27	.00	10.57
90305	.02	.00	.00	41.91	.36	.72	.72	9.98	37.48	10.70	38.20	.00	10.70
90308	.07	.00	.00	39.03	.35	.72	.72	10.06	37.67	10.78	38.39	.00	10.78
90309	.24	.00	.00	38.32	.37	.72	.72	10.12	37.73	10.84	38.45	.00	10.84
90310	.02	.00	.00	37.97	.37	.72	.72	10.13	37.78	10.85	38.50	.00	10.85
90318	.25	.00	.00	36.40	.37	.72	.72	10.26	38.20	10.98	38.93	.00	10.98
90319	.03	.00	.00	34.86	.38	.72	.72	10.28	38.25	11.00	38.97	.00	11.00
90324	.12	.00	.00	33.87	.38	.72	.72	10.38	38.48	11.10	39.20	.00	11.10

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	=	13.380 IN
PRECIP., NET	=	13.380 IN
PREDICTED RUNOFF	=	1.322 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	.721 IN
ACTUAL SOIL EVAP	=	10.819 IN
TOTAL ET	=	11.540 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	11.540 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.518 IN
IRRIGATION APPLIED	=	.000 IN

WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.03	.00	25.55	.33	.00	.00	.59	3.27	.59	3.27	.00	.59		
91084	.06	.00	.00	32.55	.30	.00	.00	.64	3.34	.64	3.34	.00	.64		
91085	.29	.10	.00	32.87	.31	.00	.00	.72	3.42	.72	3.42	.00	.72		
91086	.17	.04	.00	33.19	.32	.00	.00	.80	3.50	.80	3.50	.00	.80		
91087	.15	.04	.00	33.51	.32	.00	.00	.88	3.58	.88	3.58	.00	.88		
91088	.19	.06	.00	33.84	.33	.00	.00	.96	3.66	.96	3.66	.00	.96		
91089	.22	.07	.00	34.17	.33	.00	.00	1.04	3.74	1.04	3.74	.00	1.04		
91090	.25	.09	.00	34.50	.34	.00	.00	1.12	3.82	1.12	3.82	.00	1.12		
91091	.28	.12	.00	34.83	.34	.00	.00	1.21	3.91	1.21	3.91	.00	1.21		
91092	.02	.00	.00	35.17	.34	.00	.00	1.22	3.99	1.23	4.00	.00	1.23		
91093	.02	.00	.00	35.51	.34	.00	.00	1.24	4.08	1.24	4.08	.00	1.24		
91094	.05	.00	.00	35.85	.35	.00	.00	1.28	4.17	1.28	4.17	.00	1.28		
91096	.21	.07	.00	36.36	.35	.00	.00	1.38	4.35	1.38	4.36	.00	1.38		
91100	.02	.00	.00	37.41	.35	.01	.01	1.42	4.74	1.43	4.75	.00	1.43		
91102	.01	.00	.00	38.46	.34	.01	.01	1.45	4.94	1.46	4.95	.00	1.46		
91105	.05	.00	.00	39.35	.34	.01	.01	1.51	5.26	1.52	5.28	.00	1.52		
91106	.05	.00	.00	40.07	.34	.01	.02	1.55	5.37	1.56	5.39	.00	1.56		
91107	.10	.00	.00	40.43	.35	.02	.02	1.63	5.48	1.64	5.50	.00	1.64		
91108	.03	.00	.00	40.79	.35	.02	.02	1.65	5.59	1.67	5.61	.00	1.67		
91109	.03	.00	.00	41.15	.35	.02	.02	1.67	5.71	1.69	5.73	.00	1.69		
91116	.01	.00	.00	42.59	.34	.03	.04	1.74	6.56	1.78	6.59	.00	1.78		
91119	.05	.00	.00	44.40	.34	.04	.04	1.80	6.95	1.84	6.99	.00	1.84		
91120	.09	.00	.00	45.12	.34	.04	.05	1.87	7.08	1.91	7.13	.00	1.91		
91121	.01	.00	.00	45.48	.34	.05	.05	1.89	7.22	1.94	7.27	.00	1.94		
91123	.02	.00	.00	46.02	.34	.05	.06	1.91	7.49	1.97	7.55	.00	1.97		
91128	.12	.00	.00	47.26	.34	.07	.07	2.04	8.22	2.11	8.29	.00	2.11		
91129	.22	.00	.00	48.32	.34	.07	.08	2.19	8.37	2.26	8.44	.00	2.26		
91130	.25	.00	.00	48.67	.35	.08	.08	2.34	8.52	2.42	8.60	.00	2.42		
91131	.37	.00	.00	49.02	.37	.08	.09	2.49	8.67	2.58	8.76	.00	2.58		
91132	.01	.00	.00	49.36	.37	.09	.09	2.52	8.82	2.60	8.92	.00	2.60		
91134	.21	.00	.00	49.87	.37	.09	.10	2.69	9.14	2.78	9.24	.00	2.78		
91137	.16	.00	.00	50.72	.37	.11	.11	2.85	9.62	2.95	9.74	.00	2.95		
91138	.55	.07	.00	51.39	.39	.11	.12	3.01	9.79	3.12	9.91	.00	3.12		
91139	.38	.02	.00	51.72	.41	.12	.12	3.16	9.95	3.28	10.08	.00	3.28		
91140	.02	.00	.00	52.04	.40	.12	.13	3.28	10.12	3.40	10.25	.00	3.40		
91141	.01	.00	.00	52.37	.40	.13	.13	3.34	10.29	3.46	10.42	.00	3.46		
91145	.25	.00	.00	53.16	.39	.15	.15	3.61	10.99	3.76	11.14	.00	3.76		
91147	.28	.00	.00	54.09	.40	.15	.16	3.77	11.34	3.93	11.50	.00	3.93		
91148	.01	.00	.00	54.55	.40	.16	.17	3.85	11.52	4.01	11.69	.00	4.01		
91149	.02	.00	.00	54.85	.39	.16	.17	3.91	11.71	4.08	11.88	.00	4.08		
91150	.12	.00	.00	55.14	.40	.17	.18	4.01	11.89	4.18	12.06	.00	4.18		
91151	.03	.00	.00	55.44	.39	.17	.18	4.08	12.07	4.25	12.25	.00	4.25		
91154	.03	.00	.00	56.01	.39	.19	.20	4.20	12.63	4.39	12.83	.00	4.39		
91155	.12	.00	.00	56.56	.38	.20	.20	4.29	12.82	4.49	13.03	.00	4.49		
91156	.57	.05	.00	56.84	.41	.20	.21	4.46	13.02	4.66	13.22	.00	4.66		
91157	.15	.00	.00	57.10	.41	.21	.21	4.62	13.21	4.82	13.42	.00	4.82		
91158	.12	.00	.00	57.37	.41	.21	.22	4.76	13.40	4.97	13.62	.00	4.97		
91159	.01	.00	.00	57.63	.40	.22	.22	4.84	13.60	5.05	13.82	.00	5.05		
91171	.91	.16	.00	59.17	.39	.28	.29	5.30	16.01	5.58	16.30	.00	5.58		
91173	.03	.00	.00	60.67	.41	.29	.30	5.45	16.43	5.75	16.73	.00	5.75		
91174	.02	.00	.00	60.95	.41	.30	.31	5.51	16.64	5.81	16.94	.00	5.81		
91175	.02	.00	.00	61.14	.40	.31	.31	5.56	16.84	5.87	17.16	.00	5.87		
91176	.03	.00	.00	61.31	.40	.31	.32	5.62	17.05	5.93	17.37	.00	5.93		
91177	.01	.00	.00	61.48	.40	.32	.32	5.66	17.26	5.97	17.59	.00	5.97		
91179	.11	.00	.00	61.73	.40	.33	.33	5.77	17.69	6.10	18.02	.00	6.10		
91181	.05	.00	.00	62.03	.40	.34	.35	5.83	18.11	6.17	18.46	.00	6.17		
91182	.02	.00	.00	62.25	.39	.35	.35	5.87	18.32	6.22	18.67	.00	6.22		
91191	.10	.00	.00	62.86	.38	.40	.40	6.10	20.24	6.50	20.65	.00	6.50		
91195	.03	.00	.00	63.46	.38	.42	.43	6.17	21.10	6.59	21.53	.00	6.59		
91206	.22	.00	.00	63.80	.36	.49	.49	6.47	23.43	6.96	23.92	.00	6.96		
91207	.12	.00	.00	63.87	.36	.49	.50	6.57	23.64	7.06	24.14	.00	7.06		
91213	.29	.00	.00	63.78	.36	.53	.53	6.83	24.88	7.36	25.41	.00	7.36		
91214	.02	.00	.00	63.63	.36	.53	.54	6.85	25.08	7.38	25.62	.00	7.38		
91218	.06	.00	.00	63.47	.36	.55	.56	6.94	25.89	7.49	26.45	.00	7.49		
91235	.09	.00	.00	62.33	.35	.64	.65	7.19	29.11	7.83	29.76	.00	7.83		

91239	.28	.00	.00	60.69	.34	.66	.67	7.39	29.81	8.05	30.48	.00	8.05
91240	.61	.03	.00	60.20	.38	.66	.67	7.57	29.99	8.23	30.66	.00	8.23
91251	.24	.00	.00	58.86	.36	.71	.72	7.93	31.77	8.64	32.49	.00	8.64
91252	.03	.00	.00	57.39	.36	.71	.73	7.96	31.92	8.67	32.64	.00	8.67
91254	.84	.13	.00	56.99	.38	.72	.73	8.11	32.22	8.84	32.95	.00	8.84
91256	.01	.00	.00	56.45	.40	.73	.74	8.28	32.51	9.01	33.25	.00	9.01
91257	.19	.00	.00	56.03	.40	.73	.75	8.37	32.65	9.11	33.40	.00	9.11
91272	.11	.00	.00	53.63	.38	.78	.79	8.85	34.58	9.63	35.37	.00	9.63
91277	.10	.00	.00	50.41	.36	.78	.79	8.99	35.14	9.77	35.93	.00	9.77
91290	.06	.00	.00	47.29	.36	.78	.79	9.20	36.38	9.98	37.17	.00	9.98
91291	.01	.00	.00	44.80	.35	.78	.79	9.22	36.46	10.00	37.25	.00	10.00
91295	.12	.00	.00	43.89	.35	.78	.79	9.33	36.78	10.11	37.57	.00	10.11
91298	.01	.00	.00	42.63	.35	.78	.79	9.37	37.01	10.15	37.80	.00	10.15
91299	.18	.00	.00	41.90	.36	.78	.79	9.44	37.08	10.23	37.87	.00	10.23
91300	.28	.00	.00	41.54	.37	.78	.79	9.52	37.15	10.30	37.94	.00	10.30
91301	.06	.00	.00	41.18	.38	.78	.79	9.56	37.22	10.34	38.01	.00	10.34
91302	.01	.00	.00	40.82	.37	.78	.79	9.59	37.29	10.38	38.08	.00	10.38
91304	.24	.00	.00	40.28	.38	.78	.79	9.68	37.42	10.46	38.21	.00	10.46
91305	.12	.00	.00	39.74	.39	.78	.79	9.74	37.48	10.52	38.28	.00	10.52
91309	.18	.00	.00	38.85	.39	.78	.79	9.91	37.73	10.69	38.52	.00	10.69
91310	.14	.00	.00	37.97	.40	.78	.79	9.95	37.78	10.73	38.58	.00	10.73
91313	.09	.00	.00	37.26	.39	.78	.79	10.12	37.95	10.90	38.74	.00	10.90
91316	.04	.00	.00	36.22	.39	.78	.79	10.26	38.11	11.04	38.90	.00	11.04
91317	.06	.00	.00	35.54	.39	.78	.79	10.31	38.16	11.09	38.95	.00	11.09
91322	.07	.00	.00	34.53	.38	.78	.79	10.47	38.39	11.25	39.18	.00	11.25
91323	.04	.00	.00	33.54	.38	.78	.79	10.50	38.43	11.28	39.23	.00	11.28
91324	.12	.00	.00	33.22	.39	.78	.79	10.54	38.48	11.32	39.27	.00	11.32
91325	.09	.00	.00	32.90	.39	.78	.79	10.59	38.52	11.37	39.31	.00	11.37
91326	.01	.00	.00	32.58	.39	.78	.79	10.63	38.56	11.41	39.35	.00	11.41

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	1.066 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	.781 IN
ACTUAL SOIL EVAP	=	11.219 IN
TOTAL ET	=	12.000 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.000 IN
BEGIN SOIL WATER	=	.518 IN
FINAL SOIL WATER	=	.462 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	1.457
DEEP PERCOLATION	=	.000
TOTAL ET	=	11.785
IRRIGATION APPLIED	=	.000
AVG. AVAL. STORAGE	=	2.691 IN
FINAL AVAL. STORAGE	=	3.138 IN

FINAL STORAGE FOR EACH FRACTION

.000 .000 .450 .012

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

RAMSAY FLATS CONTROL PLOT SIMULATION

1989-1991 (SHALLOW, LOW SOIL EVAP)

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.436	.000	5.219	.000
FEB	.000	.000	.000	.391	.000	4.778	.000
MAR	1.245	1.245	.353	.724	.000	4.513	.000
APR	3.735	3.735	1.555	2.015	.000	5.062	.000
MAY	1.480	1.480	.000	1.595	.000	4.751	.000
JUN	.920	.920	.000	1.383	.000	4.563	.000
JUL	1.070	1.070	.000	1.277	.000	4.153	.000
AUG	2.180	2.180	.074	1.704	.000	4.219	.000
SEP	.300	.300	.000	.839	.000	4.234	.000
OCT	.860	.860	.000	.806	.000	4.056	.000
NOV	.170	.170	.000	.409	.000	3.956	.000
DEC	.000	.000	.000	.234	.000	3.704	.000
TOT	11.960	11.960	1.982	11.814	.000	4.434	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	3.600	.000
FEB	.000	.000	.000	.000	.000	3.600	.000
MAR	1.115	1.115	.262	.550	.000	3.629	.000
APR	2.875	2.875	.718	1.304	.000	4.360	.000
MAY	3.500	3.500	.330	2.454	.000	4.886	.000
JUN	1.210	1.210	.000	1.754	.000	5.143	.000
JUL	1.150	1.150	.012	1.182	.000	4.715	.000
AUG	2.000	2.000	.000	2.023	.000	4.872	.000
SEP	.500	.500	.000	.939	.000	4.634	.000
OCT	.280	.280	.000	.482	.000	4.337	.000
NOV	.750	.750	.000	.551	.000	4.419	.000
DEC	.000	.000	.000	.300	.000	4.253	.000
TOT	13.380	13.380	1.322	11.540	.000	4.371	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.223	.000	3.999	.000
FEB	.000	.000	.000	.169	.000	3.805	.000
MAR	1.475	1.475	.423	.729	.000	3.704	.000
APR	1.025	1.025	.191	.793	.000	4.129	.000
MAY	3.040	3.040	.094	2.338	.000	4.456	.000
JUN	2.180	2.180	.205	1.918	.000	4.751	.000
JUL	.490	.490	.000	.979	.000	4.456	.000
AUG	1.350	1.350	.027	1.168	.000	4.203	.000
SEP	1.420	1.420	.125	1.324	.000	4.490	.000
OCT	1.070	1.070	.000	.817	.000	4.301	.000
NOV	.960	.960	.000	1.150	.000	4.615	.000
DEC	.000	.000	.000	.389	.000	4.229	.000
TOT	13.010	13.010	1.066	12.000	.000	4.261	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.220	.000	4.273	.000
FEB	.000	.000	.000	.187	.000	4.061	.000
MAR	1.278	1.278	.346	.668	.000	3.949	.000
APR	2.545	2.545	.821	1.371	.000	4.517	.000
MAY	2.673	2.673	.141	2.129	.000	4.697	.000
JUN	1.437	1.437	.068	1.685	.000	4.819	.000
JUL	.903	.903	.004	1.146	.000	4.441	.000
AUG	1.843	1.843	.034	1.632	.000	4.431	.000
SEP	.740	.740	.042	1.034	.000	4.453	.000
OCT	.737	.737	.000	.702	.000	4.231	.000
NOV	.627	.627	.000	.704	.000	4.330	.000
DEC	.000	.000	.000	.308	.000	4.062	.000
TOT	12.783	12.783	1.457	11.785	.000	4.355	.000

****
SNOW NOTICE
****
DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf03ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

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CARD   1:SILVER BOW CREEK RI/FS
CARD   2:RAMSAY FLATS CONTROL PLOT
CARD   3:1989-1991 (SHALLOW, LOW LAI)
CARD   4:      89      91       2       1       0
CARD   5:    .250    .400    .350 100.0002000.000
CARD   6:       2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:       1   1.000    .450
CARD  14:       3
CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  16:       1   1.000
CARD  17:   1.000
CARD  18:   1.000
CARD  19:    .015
CARD  17:   1.000
CARD  18:   1.000
CARD  19:    .015
CARD  17:   1.000
CARD  18:   1.000
CARD  19:    .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (SHALLOW, LOW LAI)

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.06
2	.010	2.65	.10
3	.030	1.80	.30
4	.500	1.60	.45
5	.200	2.65	.08

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600	ACRES
SLOPE LENGTH	1450.00	FT
AVERAGE SLOPE	.0199	

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.450

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .35 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 2.64 TONS/ACRE
ENRICHMENT RATIO 1.020

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MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED 1.55 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 16.72 TONS/ACRE
ENRICHMENT RATIO 1.002

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
2 STORMS PRODUCED .07 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .58 TONS/ACRE
ENRICHMENT RATIO 1.073

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

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MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
15 STORMS PRODUCED 1.98 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 19.94 TONS/ACRE
ENRICHMENT RATIO 1.006

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MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
6 STORMS PRODUCED .26 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.85 TONS/ACRE
ENRICHMENT RATIO 1.023

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
5 STORMS PRODUCED .72 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 6.76 TONS/ACRE
ENRICHMENT RATIO 1.015

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
2 STORMS PRODUCED .33 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 3.50 TONS/ACRE
ENRICHMENT RATIO 1.028

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
1 STORMS PRODUCED .01 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .09 TONS/ACRE
ENRICHMENT RATIO 1.078

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

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MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

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MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
14 STORMS PRODUCED 1.32 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 12.21 TONS/ACRE
ENRICHMENT RATIO 1.021

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MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .42 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 3.19 TONS/ACRE
ENRICHMENT RATIO 1.020

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .19 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.60 TONS/ACRE
ENRICHMENT RATIO 1.014

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
2 STORMS PRODUCED .09 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .71 TONS/ACRE
ENRICHMENT RATIO 1.052

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
2 STORMS PRODUCED .21 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.93 TONS/ACRE
ENRICHMENT RATIO 1.045

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
1 STORMS PRODUCED .03 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .20 TONS/ACRE
ENRICHMENT RATIO 1.079

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MONTHLY SUMMARY FOR SEP, 1991
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6 STORMS PRODUCED 1.42 IN. OF RAINFALL
1 STORMS PRODUCED .13 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.18 TONS/ACRE
ENRICHMENT RATIO 1.046

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MONTHLY SUMMARY FOR OCT, 1991
----

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

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MONTHLY SUMMARY FOR NOV, 1991
----

11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

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MONTHLY SUMMARY FOR DEC, 1991
----

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991
----

94 STORMS PRODUCED 13.01 IN. OF RAINFALL
15 STORMS PRODUCED 1.07 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 8.81 TONS/ACRE
ENRICHMENT RATIO 1.032

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (SHALLOW, LOW LAI)

STORM SUMMARY

314 STORMS PRODUCED 38.35 IN. OF RAINFALL
44 STORMS PRODUCED 4.37 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.07	129364.	.3551	.0057	5691.
2	.10	187257.	.5141	.0082	8239.
3	.31	576803.	1.5835	.0254	25377.
4	.44	835126.	2.2927	.0367	36742.
5	.08	152369.	.4183	.0067	6704.
TOTAL		1880919.	5.1638	.0828	82753.

TOTAL SOIL LOSS FOR AREA 40.96 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES
AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.254
SILT	.403
SAND	.343
ORGANIC MATTER	.005

INDEX OF SPECIFIC SURFACE 32.79 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.016

GLEAMS HYDROLOGY/EROSION OUTPUT

RF04

HYDROLOGY INPUT PARAMETER FILENAME: rf04.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
RAMSAY FLATS DEEP-TILL SIMULATION
1989-1991 (INCREASED LAI, LOW SOIL EVAP)

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL OURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	70	.00
0	1	99	2.00
0	1	129	2.80
0	1	277	2.80
0	1	306	1.80
0	1	336	.90
0	1	366	.00
0	2	70	.00
0	2	99	2.00
0	2	129	2.80
0	2	277	2.80
0	2	306	1.80
0	2	336	.90
0	2	366	.00
0	3	70	.00
0	3	99	2.00
0	3	129	2.80
0	3	277	2.80
0	3	306	1.80
0	3	336	.90
0	3	366	.00

FIELD AREA	=	22.960	ACRES
ROOTING DEPTH	=	60.000	IN
SATURATED CONDUCTIVITY	=	.500	IN/HR
AVG. FUL	=	.427	
AVG. FIELD CAPACITY	=	.440	IN/IN
INITIAL STORAGE FRACTION	=	.850	
EVAPORATION COEFFICIENT	=	3.080	
AVERAGE POROSITY	=	.600	CC/CC
SCS CURVE NUMBER	=	78.000	
CHANNEL SLOPE	=	.015	FT/FT
WATERSHED LEW/WIDTH RATIO	=	2.000	
PEAK FLOW RATE COEFFICIENT	=	34.276	
PEAK FLOW RATE EXPONENT	=	.868	
UPPER LIMIT OF STORAGE	=	16.800	IN
AVG. 15-BAR WATER CONTENT	=	.320	IN/IN
INITIAL SOIL WATER STORAGE	=	6.120	IN
FRAC. P.A.W. TO BEGIN IRR.	=	.000	
FRAC. P.A.W. TO END IRR.	=	.000	

UPPER LIMIT OF STORAGES, IN

.118	1.180	1.180	1.180	1.180	1.180	1.180	1.800	1.800	1.500	1.500	3.000

INITIAL PLANT AVAILABLE STORAGE, IN

.050	.502	.502	.502	.502	.502	.502	.510	.510	.510	.510	1.020

POROSITY BY LAYER (CC/CC)

.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600

FUL BY LAYER (IN/IN)

.500	.500	.500	.500	.500	.500	.500	.333	.333	.400	.400	.400

FEILD CAPACITY BY LAYER (IN/IN)

.450	.450	.450	.450	.450	.450	.450	.400	.400	.450	.450	.450

FIELD CAPACITY BY LAYER (IN)

.177	1.770	1.770	1.770	1.770	1.770	1.770	2.400	2.400	2.700	2.700	5.400

15-BAR WATER CONTENT BY LAYER (IN/IN)

.300	.300	.300	.300	.300	.300	.300	.300	.300	.350	.350	.350

WATER CONTENT AT WILT. PT. BY LAYER (IN)

.118	1.180	1.180	1.180	1.180	1.180	1.180	1.800	1.800	2.100	2.100	4.200

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.41	.16	.16	1.05	1.82	1.21	1.97	.00	1.21		
89084	.05	.00	.00	32.55	.40	.19	.19	1.10	1.86	1.28	2.04	.00	1.28		
89085	.17	.02	.00	32.87	.40	.21	.21	1.14	1.90	1.35	2.11	.00	1.35		
89086	.12	.01	.00	33.19	.40	.25	.25	1.19	1.95	1.44	2.20	.00	1.44		
89087	.20	.04	.00	33.51	.40	.28	.28	1.25	2.01	1.53	2.29	.00	1.53		
89088	.19	.03	.00	33.84	.41	.32	.32	1.30	2.06	1.62	2.38	.00	1.62		
89089	.23	.05	.00	34.17	.41	.36	.36	1.35	2.12	1.71	2.48	.00	1.71		
89090	.26	.06	.00	34.50	.41	.40	.40	1.40	2.17	1.80	2.57	.00	1.80		
89091	.28	.07	.00	34.83	.41	.45	.45	1.45	2.22	1.90	2.67	.00	1.90		
89092	.37	.11	.00	35.17	.41	.49	.49	1.50	2.28	1.99	2.77	.00	1.99		
89093	.36	.11	.00	35.51	.42	.55	.55	1.54	2.33	2.09	2.87	.00	2.09		
89094	.38	.13	.00	35.85	.42	.60	.60	1.59	2.38	2.19	2.98	.00	2.19		
89095	.42	.15	.00	36.19	.42	.66	.66	1.63	2.43	2.29	3.09	.00	2.29		
89096	.45	.18	.00	36.54	.42	.72	.72	1.67	2.48	2.39	3.20	.00	2.39		
89097	.49	.21	.00	36.88	.43	.79	.79	1.71	2.53	2.50	3.32	.00	2.50		
89098	.05	.00	.00	37.23	.43	.85	.85	1.75	2.58	2.60	3.43	.00	2.60		
89099	.05	.00	.00	37.58	.43	.93	.93	1.79	2.63	2.71	3.55	.00	2.71		
89100	.01	.00	.00	37.93	.42	1.00	1.00	1.82	2.68	2.82	3.68	.00	2.82		
89106	.05	.00	.00	39.17	.42	1.49	1.49	2.03	2.98	3.52	4.47	.00	3.52		
89107	.15	.00	.00	40.43	.41	1.59	1.59	2.06	3.03	3.65	4.61	.00	3.65		
89111	.01	.00	.00	41.33	.41	1.97	1.97	2.18	3.23	4.16	5.21	.00	4.16		
89112	.10	.00	.00	42.23	.40	2.08	2.08	2.21	3.29	4.29	5.36	.00	4.29		
89113	.18	.00	.00	42.59	.41	2.18	2.18	2.24	3.34	4.43	5.52	.00	4.43		
89114	.13	.00	.00	42.96	.41	2.29	2.29	2.27	3.39	4.56	5.68	.00	4.56		
89115	.03	.00	.00	43.32	.40	2.41	2.41	2.30	3.44	4.70	5.85	.00	4.70		
89117	.19	.00	.00	43.86	.40	2.64	2.64	2.35	3.55	4.98	6.19	.00	4.98		
89118	.02	.00	.00	44.40	.40	2.76	2.76	2.37	3.60	5.13	6.36	.00	5.13		
89119	.01	.00	.00	44.76	.40	2.88	2.88	2.39	3.65	5.28	6.54	.00	5.28		
89122	.02	.00	.00	45.48	.39	3.27	3.27	2.46	3.82	5.73	7.09	.00	5.73		
89127	.02	.00	.00	46.91	.38	3.98	3.98	2.54	4.08	6.52	8.07	.00	6.52		
89128	.06	.00	.00	47.97	.38	4.13	4.13	2.55	4.14	6.68	8.27	.00	6.68		
89129	.02	.00	.00	48.32	.37	4.29	4.29	2.56	4.19	6.85	8.48	.00	6.85		
89130	.01	.00	.00	48.67	.37	4.45	4.45	2.57	4.25	7.02	8.69	.00	7.02		
89131	.15	.00	.00	49.02	.37	4.60	4.60	2.58	4.30	7.19	8.91	.00	7.19		
89132	.01	.00	.00	49.36	.37	4.76	4.76	2.60	4.36	7.36	9.12	.00	7.36		
89133	.10	.00	.00	49.70	.37	4.93	4.93	2.61	4.42	7.53	9.34	.00	7.53		
89134	.01	.00	.00	50.04	.36	5.09	5.09	2.62	4.47	7.71	9.56	.00	7.71		
89135	.13	.00	.00	50.38	.36	5.26	5.26	2.63	4.53	7.89	9.79	.00	7.89		
89136	.01	.00	.00	50.72	.36	5.42	5.42	2.64	4.59	8.07	10.01	.00	8.07		
89138	.17	.00	.00	51.22	.36	5.76	5.76	2.67	4.71	8.43	10.47	.00	8.43		
89139	.01	.00	.00	51.72	.35	5.94	5.94	2.68	4.77	8.62	10.71	.00	8.62		
89143	.01	.00	.00	52.53	.35	6.60	6.64	2.73	5.02	9.33	11.66	.00	9.33		
89144	.04	.00	.00	53.32	.34	6.73	6.82	2.74	5.08	9.48	11.90	.00	9.48		
89145	.01	.00	.00	53.63	.34	6.86	7.01	2.76	5.14	9.62	12.15	.00	9.62		

89148	.50	.00	.00	54.25	.34	7.21	7.56	2.80	5.34	10.01	12.90	.00	10.01
89149	.20	.00	.00	54.85	.34	7.35	7.75	2.81	5.40	10.17	13.15	.00	10.17
89153	.01	.00	.00	55.58	.34	7.80	8.52	2.87	5.67	10.66	14.19	.00	10.66
89154	.02	.00	.00	56.29	.33	7.88	8.71	2.88	5.74	10.76	14.45	.00	10.76
89161	.17	.00	.00	57.36	.33	8.25	10.12	2.98	6.23	11.23	16.35	.00	11.23
89166	.25	.00	.00	58.85	.32	8.43	11.15	3.06	6.59	11.49	17.75	.00	11.49
89167	.31	.00	.00	59.54	.33	8.51	11.36	3.07	6.67	11.58	18.03	.00	11.58
89168	.01	.00	.00	59.76	.33	8.58	11.57	3.09	6.74	11.67	18.32	.00	11.67
89171	.09	.00	.00	60.17	.33	8.74	12.21	3.14	6.97	11.88	19.18	.00	11.88
89175	.03	.00	.00	60.86	.32	8.89	13.07	3.20	7.27	12.08	20.34	.00	12.08
89178	.03	.00	.00	61.48	.32	8.95	13.73	3.24	7.50	12.20	21.22	.00	12.20
89193	.03	.00	.00	62.71	.32	9.00	17.04	3.34	8.65	12.34	25.69	.00	12.34
89194	.12	.00	.00	63.50	.32	9.01	17.26	3.36	8.73	12.37	25.99	.00	12.37
89197	.06	.00	.00	63.62	.32	9.05	17.92	3.40	8.96	12.45	26.89	.00	12.45
89198	.09	.00	.00	63.73	.32	9.07	18.14	3.42	9.04	12.49	27.18	.00	12.49
89203	.12	.00	.00	63.82	.32	9.13	19.24	3.49	9.43	12.62	28.67	.00	12.62
89204	.02	.00	.00	63.88	.32	9.15	19.46	3.50	9.50	12.65	28.96	.00	12.65
89205	.12	.00	.00	63.88	.32	9.18	19.68	3.52	9.58	12.70	29.26	.00	12.70
89208	.35	.00	.00	63.87	.32	9.27	20.33	3.57	9.81	12.84	30.13	.00	12.84
89209	.07	.00	.00	63.83	.33	9.33	20.54	3.58	9.88	12.91	30.42	.00	12.91
89211	.07	.00	.00	63.79	.33	9.42	20.97	3.61	10.03	13.03	31.00	.00	13.03
89212	.02	.00	.00	63.73	.32	9.46	21.18	3.63	10.11	13.09	31.29	.00	13.09
89213	.10	.00	.00	63.68	.33	9.51	21.40	3.64	10.18	13.15	31.57	.00	13.15
89220	.08	.00	.00	63.42	.32	9.68	22.85	3.75	10.69	13.43	33.54	.00	13.43
89221	.12	.00	.00	63.09	.32	9.71	23.06	3.76	10.76	13.48	33.82	.00	13.48
89223	.20	.00	.00	62.94	.32	9.78	23.46	3.79	10.90	13.57	34.37	.00	13.57
89224	.03	.00	.00	62.77	.32	9.82	23.66	3.81	10.97	13.62	34.64	.00	13.62
89225	.03	.00	.00	62.65	.32	9.85	23.86	3.82	11.04	13.67	34.91	.00	13.67
89230	.02	.00	.00	62.26	.32	9.96	24.84	3.89	11.38	13.85	36.23	.00	13.85
89231	.01	.00	.00	61.82	.32	9.97	25.03	3.91	11.45	13.88	36.48	.00	13.88
89232	.05	.00	.00	61.66	.32	9.99	25.22	3.92	11.52	13.91	36.74	.00	13.91
89233	.02	.00	.00	61.50	.32	10.00	25.41	3.93	11.58	13.94	37.00	.00	13.94
89235	.80	.00	.00	61.24	.33	10.11	25.78	3.96	11.71	14.07	37.50	.00	14.07
89236	.45	.00	.00	60.97	.34	10.23	25.97	3.97	11.78	14.21	37.75	.00	14.21
89237	.06	.00	.00	60.79	.34	10.35	26.15	3.99	11.84	14.34	37.99	.00	14.34
89238	.01	.00	.00	60.59	.34	10.45	26.33	4.00	11.91	14.46	38.24	.00	14.46
89239	.08	.00	.00	60.40	.33	10.55	26.51	4.01	11.97	14.57	38.48	.00	14.57
89240	.02	.00	.00	60.20	.33	10.66	26.69	4.03	12.03	14.67	38.72	.00	14.67
89241	.01	.00	.00	59.99	.33	10.72	26.86	4.04	12.09	14.76	38.96	.00	14.76
89242	.01	.00	.00	59.78	.33	10.79	27.04	4.05	12.15	14.85	39.19	.00	14.85
89243	.08	.00	.00	59.56	.33	10.86	27.21	4.06	12.21	14.93	39.43	.00	14.93
89245	.01	.00	.00	59.22	.33	10.98	27.55	4.09	12.33	15.07	39.89	.00	15.07
89252	.03	.00	.00	58.15	.33	11.21	28.69	4.17	12.73	15.38	41.42	.00	15.38
89253	.02	.00	.00	57.13	.32	11.23	28.85	4.18	12.79	15.41	41.63	.00	15.41
89260	.12	.00	.00	56.03	.32	11.32	29.88	4.26	13.15	15.58	43.03	.00	15.58
89262	.12	.00	.00	54.73	.32	11.35	30.16	4.28	13.25	15.63	43.41	.00	15.63
89274	.22	.00	.00	52.54	.32	11.44	31.21	4.39	13.78	15.83	44.99	.00	15.83
89275	.10	.00	.00	50.42	.33	11.44	31.21	4.40	13.82	15.84	45.03	.00	15.84
89276	.01	.00	.00	50.08	.33	11.44	31.21	4.41	13.86	15.85	45.07	.00	15.85
89277	.10	.00	.00	49.74	.33	11.44	31.21	4.41	13.90	15.86	45.11	.00	15.86
89279	.05	.00	.00	49.22	.33	11.44	31.21	4.43	13.98	15.88	45.18	.00	15.88
89284	.02	.00	.00	48.00	.33	11.44	31.21	4.50	14.17	15.95	45.38	.00	15.95
89285	.02	.00	.00	46.95	.33	11.44	31.21	4.52	14.21	15.96	45.41	.00	15.96
89297	.02	.00	.00	44.61	.33	11.44	31.21	4.70	14.65	16.15	45.86	.00	16.15
89298	.06	.00	.00	42.27	.32	11.44	31.21	4.73	14.68	16.17	45.89	.00	16.17
89299	.01	.00	.00	41.90	.32	11.44	31.21	4.75	14.72	16.19	45.93	.00	16.19
89300	.02	.00	.00	41.54	.32	11.44	31.21	4.77	14.75	16.21	45.96	.00	16.21
89301	.06	.00	.00	41.18	.33	11.44	31.21	4.79	14.79	16.24	46.00	.00	16.24
89304	.17	.00	.00	40.46	.33	11.44	31.21	4.85	14.89	16.29	46.10	.00	16.29
89307	.02	.00	.00	39.39	.33	11.44	31.21	4.91	14.99	16.35	46.20	.00	16.35
89308	.01	.00	.00	38.67	.33	11.44	31.21	4.93	15.03	16.38	46.24	.00	16.38
89309	.02	.00	.00	38.32	.33	11.44	31.21	4.95	15.06	16.39	46.27	.00	16.39
89311	.01	.00	.00	37.79	.33	11.44	31.21	4.99	15.13	16.43	46.33	.00	16.43
89312	.01	.00	.00	37.26	.33	11.44	31.21	5.01	15.16	16.46	46.37	.00	16.46
89317	.02	.00	.00	36.23	.33	11.44	31.21	5.08	15.31	16.53	46.52	.00	16.53
89318	.04	.00	.00	35.20	.33	11.44	31.21	5.11	15.35	16.56	46.55	.00	16.56
89319	.03	.00	.00	34.86	.33	11.44	31.21	5.14	15.38	16.58	46.58	.00	16.58
89321	.01	.00	.00	34.36	.32	11.44	31.21	5.17	15.44	16.62	46.64	.00	16.62

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	1.182 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	11.449 IN
ACTUAL SOIL EVAP	=	5.449 IN
TOTAL ET	=	16.898 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	16.898 IN
BEGIN SOIL WATER	=	6.120 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.32	.00	.00	.04	3.27	.04	3.27	.00	.04		
90084	.05	.00	.00	32.55	.32	.00	.00	.09	3.34	.09	3.34	.00	.09		
90085	.09	.00	.00	32.87	.32	.00	.00	.16	3.42	.16	3.42	.00	.16		
90086	.12	.01	.00	33.19	.32	.00	.00	.23	3.50	.23	3.50	.00	.23		
90087	.15	.02	.00	33.51	.32	.00	.00	.31	3.58	.31	3.58	.00	.31		
90088	.18	.02	.00	33.84	.32	.00	.00	.39	3.66	.39	3.66	.00	.39		
90089	.22	.03	.00	34.17	.33	.00	.00	.48	3.74	.48	3.74	.00	.48		
90090	.25	.05	.00	34.50	.33	.00	.00	.56	3.82	.56	3.82	.00	.56		
90091	.28	.06	.00	34.83	.33	.00	.00	.64	3.91	.64	3.91	.00	.64		
90092	.32	.07	.00	35.17	.33	.00	.01	.73	3.99	.73	4.00	.00	.73		
90093	.35	.09	.00	35.51	.33	.00	.01	.82	4.08	.82	4.09	.00	.82		
90094	.32	.08	.00	35.85	.34	.01	.01	.91	4.17	.91	4.18	.00	.91		
90102	.08	.00	.00	37.41	.34	.05	.10	1.08	4.93	1.13	5.03	.00	1.13		
90104	.20	.00	.00	39.17	.34	.07	.13	1.19	5.12	1.26	5.26	.00	1.26		
90105	.02	.00	.00	39.71	.34	.08	.15	1.23	5.23	1.31	5.38	.00	1.31		
90108	.09	.00	.00	40.43	.34	.11	.21	1.33	5.53	1.44	5.74	.00	1.44		
90112	.14	.00	.00	41.69	.33	.16	.30	1.49	5.96	1.64	6.25	.00	1.64		
90113	.03	.00	.00	42.59	.33	.17	.32	1.51	6.06	1.68	6.39	.00	1.68		
90114	.77	.00	.00	42.96	.34	.19	.35	1.62	6.17	1.81	6.52	.00	1.81		
90115	.01	.00	.00	43.32	.34	.21	.37	1.69	6.28	1.91	6.66	.00	1.91		
90116	.02	.00	.00	43.68	.34	.24	.40	1.79	6.39	2.03	6.80	.00	2.03		
90117	.04	.00	.00	44.04	.34	.26	.43	1.88	6.51	2.14	6.94	.00	2.14		
90118	.06	.00	.00	44.40	.34	.28	.46	1.93	6.62	2.21	7.08	.00	2.21		
90119	.13	.00	.00	44.76	.34	.30	.49	2.03	6.73	2.34	7.22	.00	2.34		
90120	.01	.00	.00	45.12	.34	.33	.53	2.09	6.84	2.42	7.37	.00	2.42		
90122	.07	.00	.00	45.66	.34	.37	.60	2.18	7.07	2.55	7.67	.00	2.55		
90124	.02	.00	.00	46.38	.34	.42	.68	2.26	7.30	2.68	7.98	.00	2.68		
90127	.01	.00	.00	47.27	.33	.48	.80	2.34	7.65	2.83	8.46	.00	2.83		
90128	.03	.00	.00	47.97	.33	.50	.85	2.37	7.77	2.87	8.62	.00	2.87		
90129	.07	.00	.00	48.32	.33	.53	.89	2.42	7.89	2.95	8.78	.00	2.95		
90130	.01	.00	.00	48.67	.33	.55	.94	2.46	8.01	3.00	8.95	.00	3.00		
90131	.03	.00	.00	49.02	.33	.57	.98	2.48	8.14	3.05	9.12	.00	3.05		
90132	.01	.00	.00	49.36	.33	.59	1.03	2.51	8.26	3.10	9.29	.00	3.10		
90133	.31	.00	.00	49.70	.33	.62	1.08	2.64	8.39	3.25	9.46	.00	3.25		
90134	.13	.00	.00	50.04	.33	.64	1.13	2.74	8.51	3.38	9.64	.00	3.38		
90135	.17	.00	.00	50.38	.34	.67	1.17	2.83	8.64	3.50	9.81	.00	3.50		
90137	.21	.00	.00	50.89	.33	.72	1.27	3.01	8.90	3.73	10.17	.00	3.73		
90138	.12	.00	.00	51.39	.33	.75	1.32	3.12	9.03	3.87	10.35	.00	3.87		
90139	.03	.00	.00	51.72	.33	.78	1.37	3.20	9.16	3.98	10.54	.00	3.98		
90140	.90	.00	.00	52.04	.35	.83	1.42	3.33	9.30	4.16	10.72	.00	4.16		
90141	.01	.00	.00	52.37	.34	.87	1.48	3.41	9.44	4.28	10.91	.00	4.28		
90143	.11	.00	.00	52.85	.34	.95	1.58	3.57	9.71	4.52	11.29	.00	4.52		
90144	.03	.00	.00	53.32	.34	.99	1.63	3.65	9.85	4.64	11.48	.00	4.64		
90145	.15	.00	.00	53.63	.34	1.03	1.69	3.77	9.99	4.80	11.68	.00	4.80		
90146	.01	.00	.00	53.94	.34	1.07	1.74	3.82	10.13	4.89	11.87	.00	4.89		
90148	.02	.00	.00	54.40	.34	1.13	1.85	3.91	10.42	5.04	12.27	.00	5.04		
90149	.24	.00	.00	54.85	.34	1.17	1.90	4.05	10.57	5.22	12.47	.00	5.22		
90150	.55	.00	.00	55.14	.34	1.22	1.96	4.19	10.71	5.41	12.67	.00	5.41		
90151	.26	.00	.00	55.44	.34	1.27	2.02	4.33	10.86	5.60	12.88	.00	5.60		
90152	.01	.00	.00	55.72	.34	1.32	2.07	4.44	11.01	5.76	13.08	.00	5.76		
90158	.05	.00	.00	56.69	.34	1.53	2.42	4.66	11.92	6.19	14.34	.00	6.19		
90159	.01	.00	.00	57.63	.33	1.56	2.48	4.69	12.08	6.26	14.56	.00	6.26		

90160	.20	.00	.00	57.88	.33	1.60	2.54	4.85	12.24	6.45	14.77	.00	6.45
90161	.01	.00	.00	58.13	.33	1.63	2.60	4.89	12.39	6.52	14.99	.00	6.52
90162	.01	.00	.00	58.38	.33	1.66	2.66	4.92	12.55	6.58	15.21	.00	6.58
90164	.02	.00	.00	58.74	.33	1.71	2.78	4.98	12.87	6.69	15.65	.00	6.69
90165	.15	.00	.00	59.09	.33	1.74	2.84	5.10	13.03	6.84	15.87	.00	6.84
90166	.29	.00	.00	59.32	.33	1.77	2.90	5.27	13.19	7.04	16.10	.00	7.04
90167	.28	.00	.00	59.54	.33	1.81	2.96	5.39	13.36	7.20	16.32	.00	7.20
90169	.02	.00	.00	59.86	.33	1.86	3.09	5.54	13.68	7.41	16.77	.00	7.41
90176	.13	.00	.00	60.76	.33	2.00	3.53	5.81	14.85	7.82	18.37	.00	7.82
90178	.01	.00	.00	61.56	.33	2.03	3.66	5.87	15.18	7.90	18.84	.00	7.90
90179	.02	.00	.00	61.81	.33	2.05	3.72	5.91	15.35	7.95	19.07	.00	7.95
90183	.18	.00	.00	62.18	.32	2.09	3.98	6.10	16.03	8.20	20.01	.00	8.20
90184	.01	.00	.00	62.52	.32	2.10	4.04	6.13	16.20	8.23	20.24	.00	8.23
90188	.05	.00	.00	62.82	.32	2.13	4.30	6.22	16.89	8.35	21.19	.00	8.35
90193	.01	.00	.00	63.26	.32	2.15	4.63	6.31	17.74	8.46	22.37	.00	8.46
90201	.01	.00	.00	63.69	.32	2.17	5.14	6.36	19.10	8.53	24.25	.00	8.53
90205	.02	.00	.00	63.87	.32	2.17	5.40	6.37	19.78	8.55	25.18	.00	8.55
90207	.28	.00	.00	63.87	.32	2.18	5.53	6.54	20.11	8.73	25.64	.00	8.73
90208	.01	.00	.00	63.85	.32	2.19	5.59	6.56	20.28	8.75	25.87	.00	8.75
90209	.01	.00	.00	63.83	.32	2.19	5.65	6.59	20.45	8.78	26.10	.00	8.78
90211	.02	.00	.00	63.79	.32	2.20	5.78	6.62	20.78	8.81	26.56	.00	8.81
90212	.55	.00	.00	63.73	.33	2.22	5.84	6.78	20.94	9.00	26.78	.00	9.00
90223	.45	.00	.00	63.33	.32	2.32	6.51	7.11	22.70	9.43	29.21	.00	9.43
90229	.08	.00	.00	62.46	.32	2.38	6.86	7.37	23.62	9.75	30.47	.00	9.75
90230	.35	.00	.00	61.97	.33	2.40	6.91	7.49	23.77	9.89	30.68	.00	9.89
90231	.24	.00	.00	61.82	.33	2.42	6.97	7.63	23.92	10.05	30.88	.00	10.05
90232	.11	.00	.00	61.66	.33	2.44	7.02	7.75	24.06	10.19	31.09	.00	10.19
90233	.03	.00	.00	61.50	.33	2.46	7.08	7.88	24.21	10.33	31.29	.00	10.33
90234	.07	.00	.00	61.33	.33	2.47	7.13	7.93	24.35	10.40	31.49	.00	10.40
90235	.12	.00	.00	61.15	.33	2.48	7.19	8.02	24.50	10.51	31.69	.00	10.51
90236	.02	.00	.00	60.97	.32	2.49	7.24	8.11	24.64	10.60	31.88	.00	10.60
90237	.35	.00	.00	60.79	.33	2.51	7.30	8.24	24.78	10.75	32.08	.00	10.75
90238	.11	.00	.00	60.59	.33	2.53	7.35	8.37	24.92	10.90	32.27	.00	10.90
90239	.06	.00	.00	60.40	.33	2.55	7.40	8.46	25.06	11.01	32.46	.00	11.01
90243	.01	.00	.00	59.88	.32	2.58	7.61	8.66	25.60	11.24	33.21	.00	11.24
90246	.01	.00	.00	59.11	.32	2.59	7.76	8.75	25.99	11.34	33.75	.00	11.34
90247	.07	.00	.00	58.64	.32	2.60	7.80	8.80	26.12	11.40	33.93	.00	11.40
90248	.09	.00	.00	58.40	.32	2.60	7.85	8.88	26.25	11.48	34.10	.00	11.48
90251	.20	.00	.00	57.90	.32	2.61	7.99	9.04	26.62	11.66	34.62	.00	11.66
90253	.08	.00	.00	57.26	.32	2.62	8.09	9.13	26.86	11.76	34.95	.00	11.76
90269	.01	.00	.00	54.69	.32	2.65	8.74	9.23	28.59	11.88	37.33	.00	11.88
90270	.04	.00	.00	52.07	.32	2.65	8.78	9.26	28.69	11.91	37.46	.00	11.91
90275	.05	.00	.00	51.08	.32	2.66	8.78	9.30	29.14	11.96	37.92	.00	11.96
90276	.02	.00	.00	50.08	.32	2.66	8.78	9.31	29.23	11.97	38.01	.00	11.97
90277	.02	.00	.00	49.74	.32	2.66	8.78	9.33	29.32	11.99	38.09	.00	11.99
90278	.03	.00	.00	49.39	.32	2.66	8.78	9.35	29.40	12.01	38.18	.00	12.01
90279	.01	.00	.00	49.05	.32	2.66	8.78	9.38	29.49	12.04	38.27	.00	12.04
90289	.12	.00	.00	47.12	.32	2.67	8.78	9.46	30.33	12.13	39.10	.00	12.13
90292	.03	.00	.00	44.80	.32	2.67	8.78	9.51	30.57	12.18	39.35	.00	12.18
90305	.02	.00	.00	41.91	.32	2.68	8.78	9.53	31.51	12.21	40.29	.00	12.21
90308	.07	.00	.00	39.03	.32	2.68	8.78	9.59	31.70	12.27	40.47	.00	12.27
90309	.24	.00	.00	38.32	.32	2.68	8.78	9.65	31.75	12.33	40.53	.00	12.33
90310	.02	.00	.00	37.97	.32	2.68	8.78	9.67	31.81	12.35	40.59	.00	12.35
90318	.25	.00	.00	36.40	.32	2.68	8.78	9.80	32.23	12.48	41.01	.00	12.48
90319	.03	.00	.00	34.86	.33	2.68	8.78	9.82	32.28	12.50	41.06	.00	12.50
90324	.12	.00	.00	33.87	.33	2.68	8.78	9.92	32.51	12.60	41.28	.00	12.60

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	=	13.380 IN
PRECIP., NET	=	13.380 IN
PREDICTED RUNOFF	=	.431 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	2.682 IN
ACTUAL SOIL EVAP	=	10.267 IN
TOTAL ET	=	12.949 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.949 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN

IRRIGATION APPLIED= .000 IN
WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.01	.00	25.55	.32	.00	.00	.07	3.27	.07	3.27	.00	.07		
91084	.06	.00	.00	32.55	.32	.00	.00	.13	3.34	.13	3.34	.00	.13		
91085	.29	.06	.00	32.87	.32	.00	.00	.20	3.42	.20	3.42	.00	.20		
91086	.17	.02	.00	33.19	.32	.00	.00	.28	3.50	.28	3.50	.00	.28		
91087	.15	.02	.00	33.51	.33	.00	.00	.36	3.58	.36	3.58	.00	.36		
91088	.19	.03	.00	33.84	.33	.00	.00	.44	3.66	.44	3.66	.00	.44		
91089	.22	.04	.00	34.17	.33	.00	.00	.52	3.74	.52	3.74	.00	.52		
91090	.25	.05	.00	34.50	.33	.00	.01	.60	3.82	.61	3.83	.00	.61		
91091	.28	.06	.00	34.83	.33	.00	.01	.69	3.91	.69	3.92	.00	.69		
91092	.02	.00	.00	35.17	.33	.01	.01	.71	3.99	.71	4.01	.00	.71		
91093	.02	.00	.00	35.51	.33	.01	.02	.72	4.08	.73	4.10	.00	.73		
91094	.05	.00	.00	35.85	.33	.01	.03	.76	4.17	.78	4.20	.00	.78		
91096	.21	.04	.00	36.36	.33	.02	.04	.87	4.35	.89	4.40	.00	.89		
91100	.02	.00	.00	37.41	.33	.04	.09	.92	4.73	.97	4.82	.00	.97		
91102	.01	.00	.00	38.46	.33	.06	.12	.96	4.92	1.01	5.04	.00	1.01		
91105	.05	.00	.00	39.35	.33	.08	.18	1.02	5.22	1.10	5.39	.00	1.10		
91106	.05	.00	.00	40.07	.33	.09	.19	1.06	5.32	1.15	5.51	.00	1.15		
91107	.10	.00	.00	40.43	.33	.09	.21	1.14	5.42	1.24	5.63	.00	1.24		
91108	.03	.00	.00	40.79	.33	.10	.23	1.17	5.52	1.27	5.76	.00	1.27		
91109	.03	.00	.00	41.15	.33	.11	.25	1.19	5.63	1.30	5.88	.00	1.30		
91116	.01	.00	.00	42.59	.33	.18	.42	1.28	6.39	1.46	6.81	.00	1.46		
91119	.05	.00	.00	44.40	.33	.20	.51	1.34	6.73	1.55	7.24	.00	1.55		
91120	.09	.00	.00	45.12	.33	.21	.54	1.42	6.85	1.63	7.39	.00	1.63		
91121	.01	.00	.00	45.48	.33	.22	.57	1.44	6.97	1.66	7.53	.00	1.66		
91123	.02	.00	.00	46.02	.33	.24	.63	1.46	7.21	1.71	7.84	.00	1.71		
91128	.12	.00	.00	47.26	.33	.29	.80	1.60	7.83	1.89	8.63	.00	1.89		
91129	.22	.00	.00	48.32	.33	.30	.84	1.73	7.95	2.03	8.79	.00	2.03		
91130	.25	.00	.00	48.67	.33	.32	.88	1.86	8.08	2.18	8.96	.00	2.18		
91131	.37	.00	.00	49.02	.33	.34	.92	1.99	8.21	2.33	9.13	.00	2.33		
91132	.01	.00	.00	49.36	.33	.36	.95	2.03	8.34	2.39	9.30	.00	2.39		
91134	.21	.00	.00	49.87	.33	.40	1.03	2.19	8.61	2.59	9.64	.00	2.59		
91137	.16	.00	.00	50.72	.33	.45	1.15	2.38	9.02	2.83	10.17	.00	2.83		
91138	.55	.00	.00	51.39	.34	.48	1.19	2.51	9.16	2.99	10.36	.00	2.99		
91139	.38	.00	.00	51.72	.34	.52	1.23	2.64	9.30	3.16	10.54	.00	3.16		
91140	.02	.00	.00	52.04	.34	.55	1.28	2.73	9.45	3.28	10.72	.00	3.28		
91141	.01	.00	.00	52.37	.34	.58	1.32	2.81	9.59	3.38	10.91	.00	3.38		
91145	.25	.00	.00	53.16	.34	.68	1.49	3.07	10.18	3.75	11.67	.00	3.75		
91147	.28	.00	.00	54.09	.34	.74	1.58	3.23	10.48	3.97	12.06	.00	3.97		
91148	.01	.00	.00	54.55	.34	.76	1.62	3.33	10.64	4.09	12.26	.00	4.09		
91149	.02	.00	.00	54.85	.33	.79	1.67	3.40	10.79	4.19	12.46	.00	4.19		
91150	.12	.00	.00	55.14	.33	.81	1.71	3.50	10.95	4.31	12.66	.00	4.31		
91151	.03	.00	.00	55.44	.33	.84	1.76	3.57	11.10	4.40	12.86	.00	4.40		
91154	.03	.00	.00	56.01	.33	.90	1.90	3.69	11.58	4.59	13.48	.00	4.59		
91155	.12	.00	.00	56.56	.33	.92	1.95	3.79	11.74	4.70	13.69	.00	4.70		
91156	.57	.00	.00	56.84	.34	.95	1.99	3.93	11.90	4.88	13.90	.00	4.88		
91157	.15	.00	.00	57.10	.34	.98	2.04	4.08	12.07	5.06	14.11	.00	5.06		
91158	.12	.00	.00	57.37	.34	1.01	2.09	4.22	12.23	5.23	14.32	.00	5.23		
91159	.01	.00	.00	57.63	.33	1.04	2.14	4.31	12.40	5.35	14.54	.00	5.35		
91171	.91	.00	.00	59.17	.33	1.27	2.74	4.76	14.45	6.03	17.19	.00	6.03		
91173	.03	.00	.00	60.67	.34	1.33	2.84	4.93	14.80	6.26	17.64	.00	6.26		
91174	.02	.00	.00	60.95	.33	1.35	2.89	4.99	14.98	6.34	17.87	.00	6.34		
91175	.02	.00	.00	61.14	.33	1.38	2.94	5.04	15.16	6.42	18.10	.00	6.42		
91176	.03	.00	.00	61.31	.33	1.40	3.00	5.10	15.34	6.50	18.33	.00	6.50		
91177	.01	.00	.00	61.48	.33	1.42	3.05	5.14	15.51	6.56	18.56	.00	6.56		
91179	.11	.00	.00	61.73	.33	1.47	3.15	5.25	15.87	6.71	19.03	.00	6.71		
91181	.05	.00	.00	62.03	.33	1.50	3.26	5.31	16.23	6.82	19.49	.00	6.82		
91182	.02	.00	.00	62.25	.33	1.52	3.31	5.36	16.41	6.88	19.72	.00	6.88		
91191	.10	.00	.00	62.86	.33	1.63	3.79	5.58	18.05	7.21	21.83	.00	7.21		
91195	.03	.00	.00	63.46	.32	1.67	4.00	5.65	18.77	7.32	22.77	.00	7.32		
91206	.22	.00	.00	63.80	.32	1.72	4.58	5.96	20.75	7.68	25.33	.00	7.68		
91207	.12	.00	.00	63.87	.32	1.73	4.63	6.05	20.93	7.78	25.56	.00	7.78		
91213	.29	.00	.00	63.78	.32	1.75	4.94	6.29	21.98	8.04	26.92	.00	8.04		
91214	.02	.00	.00	63.63	.32	1.75	4.99	6.30	22.16	8.06	27.14	.00	8.06		
91218	.06	.00	.00	63.47	.32	1.77	5.19	6.39	22.84	8.16	28.03	.00	8.16		

91235	.09	.00	.00	62.33	.32	1.78	5.99	6.55	25.58	8.34	31.57	.00	8.34
91239	.28	.00	.00	60.69	.32	1.80	6.16	6.71	26.18	8.51	32.34	.00	8.51
91240	.61	.00	.00	60.20	.33	1.81	6.20	6.80	26.32	8.62	32.53	.00	8.62
91251	.24	.00	.00	58.86	.33	1.92	6.65	7.24	27.84	9.16	34.48	.00	9.16
91252	.03	.00	.00	57.39	.32	1.92	6.68	7.30	27.97	9.22	34.65	.00	9.22
91254	.84	.00	.00	56.99	.33	1.95	6.76	7.45	28.22	9.40	34.98	.00	9.40
91256	.01	.00	.00	56.45	.33	1.99	6.83	7.63	28.47	9.61	35.30	.00	9.61
91257	.19	.00	.00	56.03	.33	2.01	6.87	7.71	28.59	9.71	35.45	.00	9.71
91272	.11	.00	.00	53.63	.33	2.14	7.29	8.19	30.23	10.33	37.52	.00	10.33
91277	.10	.00	.00	50.41	.32	2.14	7.29	8.33	30.70	10.47	37.99	.00	10.47
91290	.06	.00	.00	47.29	.32	2.14	7.29	8.54	31.86	10.68	39.14	.00	10.68
91291	.01	.00	.00	44.80	.32	2.14	7.29	8.56	31.94	10.70	39.23	.00	10.70
91295	.12	.00	.00	43.89	.32	2.14	7.29	8.67	32.26	10.81	39.55	.00	10.81
91298	.01	.00	.00	42.63	.32	2.14	7.29	8.72	32.49	10.85	39.77	.00	10.85
91299	.18	.00	.00	41.90	.32	2.14	7.29	8.79	32.56	10.93	39.85	.00	10.93
91300	.28	.00	.00	41.54	.33	2.14	7.29	8.86	32.63	11.00	39.92	.00	11.00
91301	.06	.00	.00	41.18	.33	2.14	7.29	8.91	32.70	11.04	39.99	.00	11.04
91302	.01	.00	.00	40.82	.33	2.14	7.29	8.94	32.77	11.08	40.05	.00	11.08
91304	.24	.00	.00	40.28	.33	2.14	7.29	9.02	32.90	11.16	40.19	.00	11.16
91305	.12	.00	.00	39.74	.33	2.14	7.29	9.09	32.96	11.23	40.25	.00	11.23
91309	.18	.00	.00	38.85	.33	2.14	7.29	9.26	33.21	11.39	40.49	.00	11.39
91310	.14	.00	.00	37.97	.33	2.14	7.29	9.29	33.26	11.43	40.55	.00	11.43
91313	.09	.00	.00	37.26	.33	2.14	7.29	9.46	33.43	11.60	40.72	.00	11.60
91316	.04	.00	.00	36.22	.33	2.14	7.29	9.61	33.59	11.74	40.87	.00	11.74
91317	.06	.00	.00	35.54	.33	2.14	7.29	9.65	33.64	11.79	40.92	.00	11.79
91322	.07	.00	.00	34.53	.33	2.14	7.29	9.81	33.87	11.95	41.16	.00	11.95
91323	.04	.00	.00	33.54	.33	2.14	7.29	9.84	33.92	11.98	41.20	.00	11.98
91324	.12	.00	.00	33.22	.33	2.14	7.29	9.89	33.96	12.03	41.25	.00	12.03
91325	.09	.00	.00	32.90	.33	2.14	7.29	9.93	34.00	12.07	41.29	.00	12.07
91326	.01	.00	.00	32.58	.33	2.14	7.29	9.97	34.04	12.11	41.33	.00	12.11

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	.315 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	2.138 IN
ACTUAL SOIL EVAP	=	10.557 IN
TOTAL ET	=	12.695 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.695 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	.643
DEEP PERCOLATION	=	.000
TOTAL ET	=	14.180
IRRIGATION APPLIED	=	.000
AVG. AVAL. STORAGE	=	15.752 IN
FINAL AVAL. STORAGE	=	16.800 IN

FINAL STORAGE FOR EACH FRACTION

.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

RAMSAY FLATS DEEP-TILL SIMULATION

1989-1991 (INCREASED LAI, LOW SOIL EVAP)

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.436	.000	25.103	.000
FEB	.000	.000	.000	.391	.000	24.662	.000
MAR	1.245	1.245	.210	.974	.000	24.335	.000
APR	3.735	3.735	.972	3.623	.000	24.740	.000
MAY	1.480	1.480	.000	5.016	.000	21.596	.000
JUN	.920	.920	.000	1.837	.000	19.542	.000
JUL	1.070	1.070	.000	.813	.000	19.301	.000
AUG	2.180	2.180	.000	1.837	.000	19.571	.000
SEP	.300	.300	.000	.897	.000	19.400	.000
OCT	.860	.860	.000	.466	.000	19.555	.000
NOV	.170	.170	.000	.472	.000	19.478	.000
DEC	.000	.000	.000	.135	.000	19.229	.000
TOT	11.960	11.960	1.182	16.898	.000	21.376	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	19.200	.000
FEB	.000	.000	.000	.000	.000	19.200	.000
MAR	1.115	1.115	.130	.559	.000	19.239	.000
APR	2.875	2.875	.302	1.856	.000	20.186	.000
MAY	3.500	3.500	.000	3.182	.000	20.218	.000
JUN	1.210	1.210	.000	2.413	.000	19.911	.000
JUL	1.150	1.150	.000	.988	.000	19.290	.000
AUG	2.000	2.000	.000	2.243	.000	19.498	.000
SEP	.500	.500	.000	.678	.000	19.241	.000
OCT	.280	.280	.000	.280	.000	19.206	.000
NOV	.750	.750	.000	.543	.000	19.410	.000
DEC	.000	.000	.000	.207	.000	19.259	.000
TOT	13.380	13.380	.431	12.949	.000	19.488	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	19.200	.000
FEB	.000	.000	.000	.000	.000	19.200	.000
MAR	1.475	1.475	.219	.607	.000	19.284	.000
APR	1.025	1.025	.096	1.023	.000	19.916	.000
MAY	3.040	3.040	.000	2.775	.000	19.999	.000
JUN	2.180	2.180	.000	2.411	.000	19.919	.000
JUL	.490	.490	.000	1.037	.000	19.426	.000
AUG	1.350	1.350	.000	.947	.000	19.306	.000
SEP	1.420	1.420	.000	1.544	.000	19.667	.000
OCT	1.070	1.070	.000	.818	.000	19.434	.000
NOV	.960	.960	.000	1.151	.000	19.746	.000
DEC	.000	.000	.000	.382	.000	19.360	.000
TOT	13.010	13.010	.315	12.695	.000	19.538	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.145	.000	21.168	.000
FEB	.000	.000	.000	.130	.000	21.021	.000
MAR	1.278	1.278	.186	.713	.000	20.953	.000
APR	2.545	2.545	.457	2.167	.000	21.614	.000
MAY	2.673	2.673	.000	3.657	.000	20.604	.000
JUN	1.437	1.437	.000	2.220	.000	19.790	.000
JUL	.903	.903	.000	.946	.000	19.339	.000
AUG	1.843	1.843	.000	1.676	.000	19.458	.000
SEP	.740	.740	.000	1.040	.000	19.436	.000
OCT	.737	.737	.000	.521	.000	19.398	.000
NOV	.627	.627	.000	.722	.000	19.545	.000
DEC	.000	.000	.000	.241	.000	19.283	.000
TOT	12.783	12.783	.643	14.180	.000	20.134	.000

****
SNOW NOTICE
****
DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf04ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

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CARD   1:SILVER BOW CREEK RI/FS
CARD   2:RAMSAY FLATS CONTROL PLOT
CARD   3:1989-1991 (LOW LAI, LOW SOIL EVAP)
CARD   4:      89      91       2       1       0
CARD   5:    .200    .350    .450 100.0002000.000
CARD   6:       2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:       1   1.000    .450
CARD  14:       3
CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  16:       1   1.000
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (LOW LAI, LOW SOIL EVAP)

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.05
2	.010	2.65	.09
3	.030	1.80	.26
4	.400	1.60	.45
5	.200	2.65	.15

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600 ACRES
SLOPE LENGTH	1450.00 FT
AVERAGE SLOPE	.0199

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.450

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .21 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .29 TONS/ACRE
ENRICHMENT RATIO 1.037

MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED .98 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.97 TONS/ACRE
ENRICHMENT RATIO 1.002

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
13 STORMS PRODUCED 1.19 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 2.25 TONS/ACRE
ENRICHMENT RATIO 1.006

MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
5 STORMS PRODUCED .13 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .17 TONS/ACRE
ENRICHMENT RATIO 1.055

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
4 STORMS PRODUCED .31 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .52 TONS/ACRE
ENRICHMENT RATIO 1.015

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
9 STORMS PRODUCED .45 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .69 TONS/ACRE
ENRICHMENT RATIO 1.025

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .22 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .30 TONS/ACRE
ENRICHMENT RATIO 1.045

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .10 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .15 TONS/ACRE
ENRICHMENT RATIO 1.028

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1991

11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991

94 STORMS PRODUCED 13.01 IN. OF RAINFALL
9 STORMS PRODUCED .32 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .45 TONS/ACRE
ENRICHMENT RATIO 1.039

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (LOW LAI, LOW SOIL EVAP)

STORM SUMMARY

314 STORMS PRODUCED 38.35 IN. OF RAINFALL
31 STORMS PRODUCED 1.96 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.05	8271.	.0507	.0008	812.
2	.09	14661.	.0899	.0014	1440.
3	.26	40973.	.2511	.0040	4025.
4	.45	70048.	.4293	.0069	6880.
5	.14	21854.	.1339	.0021	2147.
TOTAL		155807.	.9550	.0153	15304.

TOTAL SOIL LOSS FOR AREA 3.39 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES

AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.203
SILT	.355
SAND	.442
ORGANIC MATTER	.005

INDEX OF SPECIFIC SURFACE 27.48 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.014

GLEAMS HYDROLOGY/EROSION OUTPUT

RF05

HYDROLOGY INPUT PARAMETER FILENAME: rf05.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
RAMSAY FLATS DEEP-TILL SIMULATION
1989-1991 (INCREASED LAI, LOW SOIL EVAP, DELAYED GROWTH)

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	70	.00
0	1	99	2.00
0	1	129	2.80
0	1	277	2.80
0	1	306	1.80
0	1	336	.90
0	1	366	.00
0	2	70	.00
0	2	99	2.00
0	2	129	2.80
0	2	277	2.80
0	2	306	1.80
0	2	336	.90
0	2	366	.00
0	3	70	.00
0	3	99	2.00
0	3	129	2.80
0	3	277	2.80
0	3	306	1.80
0	3	336	.90
0	3	366	.00

FIELD AREA	=	22.960 ACRES
ROOTING DEPTH	=	60.000 IN
SATURATED CONDUCTIVITY	=	.500 IN/HR
AVG. FUL	=	.427
AVG. FIELD CAPACITY	=	.440 IN/IN
INITIAL STORAGE FRACTION	=	.850
EVAPORATION COEFFICIENT	=	3.080
AVERAGE POROSITY	=	.600 CC/CC
SCS CURVE NUMBER	=	78.000
CHANNEL SLOPE	=	.015 FT/FT
WATERSHED LEN/WIDTH RATIO	=	2.000
PEAK FLOW RATE COEFFICIENT	=	34.276
PEAK FLOW RATE EXPONENT	=	.868
UPPER LIMIT OF STORAGE	=	16.800 IN
AVG. 15-BAR WATER CONTENT	=	.320 IN/IN
INITIAL SOIL WATER STORAGE	=	6.120 IN
FRAC. P.A.W. TO BEGIN IRR.	=	.000
FRAC. P.A.W. TO END IRR.	=	.000

UPPER LIMIT OF STORAGES, IN

.118	1.180	1.180	1.180	1.180	1.180	1.180	1.800	1.800	1.500	1.500	3.000

INITIAL PLANT AVAILABLE STORAGE, IN

.050	.502	.502	.502	.502	.502	.502	.510	.510	.510	.510	1.020

POROSITY BY LAYER (CC/CC)

.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600

FUL BY LAYER (IN/IN)

.500	.500	.500	.500	.500	.500	.500	.333	.333	.400	.400	.400

FEILD CAPACITY BY LAYER (IN/IN)

.450	.450	.450	.450	.450	.450	.450	.400	.400	.450	.450	.450

FIELD CAPACITY BY LAYER (IN)

.177	1.770	1.770	1.770	1.770	1.770	1.770	2.400	2.400	2.700	2.700	5.400

15-BAR WATER CONTENT BY LAYER (IN/IN)

.300	.300	.300	.300	.300	.300	.300	.300	.300	.350	.350	.350

WATER CONTENT AT WILT. PT. BY LAYER (IN)

.118	1.180	1.180	1.180	1.180	1.180	1.180	1.800	1.800	2.100	2.100	4.200

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.41	.00	.00	1.05	1.82	1.05	1.82	.00	1.05		
89084	.05	.00	.00	32.55	.41	.00	.00	1.10	1.86	1.10	1.86	.00	1.10		
89085	.17	.02	.00	32.87	.41	.00	.00	1.14	1.90	1.14	1.90	.00	1.14		
89086	.12	.01	.00	33.19	.41	.00	.00	1.19	1.95	1.19	1.95	.00	1.19		
89087	.20	.04	.00	33.51	.41	.00	.00	1.25	2.01	1.25	2.01	.00	1.25		
89088	.19	.04	.00	33.84	.41	.00	.00	1.30	2.06	1.30	2.06	.00	1.30		
89089	.23	.05	.00	34.17	.41	.00	.00	1.35	2.12	1.35	2.12	.00	1.35		
89090	.26	.06	.00	34.50	.42	.00	.00	1.40	2.17	1.40	2.17	.00	1.40		
89091	.28	.08	.00	34.83	.42	.00	.00	1.45	2.22	1.45	2.22	.00	1.45		
89092	.37	.12	.00	35.17	.42	.00	.00	1.50	2.28	1.50	2.28	.00	1.50		
89093	.36	.12	.00	35.51	.42	.00	.00	1.54	2.33	1.54	2.33	.00	1.54		
89094	.38	.14	.00	35.85	.43	.00	.00	1.59	2.38	1.59	2.38	.00	1.59		
89095	.42	.17	.00	36.19	.43	.00	.00	1.63	2.43	1.63	2.43	.00	1.63		
89096	.45	.19	.00	36.54	.44	.00	.00	1.67	2.48	1.67	2.48	.00	1.67		
89097	.49	.22	.00	36.88	.44	.00	.00	1.71	2.53	1.71	2.53	.00	1.71		
89098	.05	.00	.00	37.23	.44	.00	.00	1.75	2.58	1.75	2.58	.00	1.75		
89099	.05	.00	.00	37.58	.44	.00	.00	1.79	2.63	1.79	2.63	.00	1.79		
89100	.01	.00	.00	37.93	.44	.00	.00	1.82	2.68	1.82	2.68	.00	1.82		
89106	.05	.00	.00	39.17	.44	.00	.00	2.03	2.98	2.03	2.98	.00	2.03		
89107	.15	.00	.00	40.43	.44	.00	.00	2.06	3.03	2.06	3.03	.00	2.06		
89111	.01	.00	.00	41.33	.44	.00	.00	2.18	3.23	2.18	3.23	.00	2.18		
89112	.10	.00	.00	42.23	.44	.00	.00	2.21	3.29	2.21	3.29	.00	2.21		
89113	.18	.00	.02	42.59	.44	.00	.00	2.24	3.34	2.24	3.34	.00	2.24		
89114	.13	.00	.10	42.96	.44	.00	.00	2.27	3.39	2.27	3.39	.00	2.27		
89115	.03	.00	.00	43.32	.44	.00	.00	2.30	3.44	2.30	3.44	.00	2.30		
89117	.19	.00	.14	43.86	.44	.00	.00	2.35	3.55	2.35	3.55	.00	2.35		
89118	.02	.00	.00	44.40	.44	.00	.00	2.37	3.60	2.37	3.60	.00	2.37		
89119	.01	.00	.00	44.76	.44	.00	.00	2.39	3.65	2.39	3.65	.00	2.39		
89122	.02	.00	.00	45.48	.43	.39	.39	2.46	3.82	2.84	4.20	.00	2.84		
89127	.02	.00	.00	46.91	.42	1.10	1.10	2.54	4.08	3.64	5.18	.00	3.64		
89128	.06	.00	.00	47.97	.42	1.25	1.25	2.55	4.14	3.80	5.39	.00	3.80		
89129	.02	.00	.00	48.32	.42	1.41	1.41	2.56	4.19	3.97	5.60	.00	3.97		
89130	.01	.00	.00	48.67	.41	1.56	1.56	2.57	4.25	4.13	5.81	.00	4.13		
89131	.15	.00	.00	49.02	.41	1.72	1.72	2.58	4.30	4.30	6.03	.00	4.30		
89132	.01	.00	.00	49.36	.41	1.88	1.88	2.60	4.36	4.48	6.24	.00	4.48		
89133	.10	.00	.00	49.70	.41	2.04	2.04	2.61	4.42	4.65	6.46	.00	4.65		
89134	.01	.00	.00	50.04	.41	2.21	2.21	2.62	4.47	4.83	6.68	.00	4.83		
89135	.13	.00	.00	50.38	.41	2.37	2.37	2.63	4.53	5.00	6.91	.00	5.00		
89136	.01	.00	.00	50.72	.40	2.54	2.54	2.64	4.59	5.18	7.13	.00	5.18		
89138	.17	.00	.00	51.22	.40	2.88	2.88	2.67	4.71	5.55	7.59	.00	5.55		
89139	.01	.00	.00	51.72	.40	3.05	3.05	2.68	4.77	5.73	7.82	.00	5.73		
89143	.01	.00	.00	52.53	.39	3.76	3.76	2.73	5.02	6.49	8.78	.00	6.49		
89144	.04	.00	.00	53.32	.38	3.94	3.94	2.74	5.08	6.68	9.02	.00	6.68		
89145	.01	.00	.00	53.63	.38	4.12	4.12	2.76	5.14	6.88	9.27	.00	6.88		

89148	.50	.00	.00	54.25	.37	4.68	4.68	2.80	5.34	7.48	10.02	.00	7.48
89149	.20	.00	.00	54.85	.38	4.87	4.87	2.81	5.40	7.68	10.27	.00	7.68
89153	.01	.00	.00	55.58	.37	5.63	5.63	2.87	5.67	8.50	11.31	.00	8.50
89154	.02	.00	.00	56.29	.36	5.83	5.83	2.88	5.74	8.71	11.57	.00	8.71
89161	.17	.00	.00	57.36	.35	7.10	7.23	2.98	6.23	10.08	13.46	.00	10.08
89166	.25	.00	.00	58.85	.33	7.65	8.27	3.06	6.59	10.71	14.86	.00	10.71
89167	.31	.00	.00	59.54	.34	7.78	8.48	3.07	6.67	10.85	15.15	.00	10.85
89168	.01	.00	.00	59.76	.33	7.89	8.69	3.09	6.74	10.98	15.43	.00	10.98
89171	.09	.00	.00	60.17	.33	8.17	9.33	3.14	6.97	11.30	16.29	.00	11.30
89175	.03	.00	.00	60.86	.33	8.41	10.19	3.20	7.27	11.60	17.46	.00	11.60
89178	.03	.00	.00	61.48	.32	8.51	10.84	3.24	7.50	11.76	18.34	.00	11.76
89193	.03	.00	.00	62.71	.32	8.62	14.15	3.37	8.65	12.00	22.81	.00	12.00
89194	.12	.00	.00	63.50	.32	8.64	14.38	3.39	8.73	12.03	23.11	.00	12.03
89197	.06	.00	.00	63.62	.32	8.67	15.04	3.43	8.96	12.11	24.00	.00	12.11
89198	.09	.00	.00	63.73	.32	8.69	15.26	3.45	9.04	12.14	24.30	.00	12.14
89203	.12	.00	.00	63.82	.32	8.76	16.36	3.52	9.43	12.28	25.78	.00	12.28
89204	.02	.00	.00	63.88	.32	8.77	16.58	3.54	9.50	12.31	26.08	.00	12.31
89205	.12	.00	.00	63.88	.32	8.80	16.79	3.55	9.58	12.35	26.37	.00	12.35
89208	.35	.00	.00	63.87	.32	8.90	17.44	3.60	9.81	12.49	27.25	.00	12.49
89209	.07	.00	.00	63.83	.33	8.95	17.66	3.61	9.88	12.57	27.54	.00	12.57
89211	.07	.00	.00	63.79	.33	9.05	18.09	3.64	10.03	12.69	28.12	.00	12.69
89212	.02	.00	.00	63.73	.32	9.09	18.30	3.66	10.11	12.75	28.41	.00	12.75
89213	.10	.00	.00	63.68	.33	9.14	18.51	3.68	10.18	12.81	28.69	.00	12.81
89220	.08	.00	.00	63.42	.32	9.31	19.97	3.78	10.69	13.09	30.66	.00	13.09
89221	.12	.00	.00	63.09	.32	9.34	20.17	3.80	10.76	13.13	30.94	.00	13.13
89223	.20	.00	.00	62.94	.32	9.40	20.58	3.83	10.90	13.23	31.48	.00	13.23
89224	.03	.00	.00	62.77	.32	9.44	20.78	3.84	10.97	13.28	31.75	.00	13.28
89225	.03	.00	.00	62.65	.32	9.48	20.98	3.85	11.04	13.33	32.02	.00	13.33
89230	.02	.00	.00	62.26	.32	9.59	21.96	3.93	11.38	13.51	33.34	.00	13.51
89231	.01	.00	.00	61.82	.32	9.60	22.15	3.94	11.45	13.54	33.63	.00	13.54
89232	.05	.00	.00	61.66	.32	9.62	22.34	3.95	11.52	13.57	33.86	.00	13.57
89233	.02	.00	.00	61.50	.32	9.63	22.53	3.97	11.58	13.60	34.11	.00	13.60
89235	.80	.00	.00	61.24	.33	9.73	22.90	3.99	11.71	13.73	34.62	.00	13.73
89236	.45	.00	.00	60.97	.34	9.86	23.08	4.01	11.78	13.87	34.86	.00	13.87
89237	.06	.00	.00	60.79	.34	9.98	23.27	4.02	11.84	14.00	35.11	.00	14.00
89238	.01	.00	.00	60.59	.34	10.08	23.45	4.03	11.91	14.11	35.35	.00	14.11
89239	.08	.00	.00	60.40	.33	10.18	23.63	4.05	11.97	14.23	35.60	.00	14.23
89240	.02	.00	.00	60.20	.33	10.27	23.81	4.06	12.03	14.33	35.84	.00	14.33
89241	.01	.00	.00	59.99	.33	10.35	23.98	4.07	12.09	14.42	36.07	.00	14.42
89242	.01	.00	.00	59.78	.33	10.42	24.16	4.08	12.15	14.50	36.31	.00	14.50
89243	.08	.00	.00	59.56	.33	10.49	24.33	4.10	12.21	14.59	36.54	.00	14.59
89245	.01	.00	.00	59.22	.33	10.60	24.67	4.12	12.33	14.73	37.00	.00	14.73
89252	.03	.00	.00	58.15	.33	10.84	25.81	4.20	12.73	15.04	38.54	.00	15.04
89253	.02	.00	.00	57.13	.32	10.86	25.96	4.22	12.79	15.07	38.75	.00	15.07
89260	.12	.00	.00	56.03	.32	10.95	27.00	4.29	13.15	15.24	40.15	.00	15.24
89262	.12	.00	.00	54.74	.32	10.98	27.28	4.31	13.25	15.29	40.53	.00	15.29
89274	.22	.00	.00	52.54	.32	11.07	28.32	4.42	13.78	15.49	42.10	.00	15.49
89275	.10	.00	.00	50.42	.33	11.07	28.32	4.43	13.82	15.50	42.14	.00	15.50
89276	.01	.00	.00	50.08	.33	11.07	28.32	4.44	13.86	15.51	42.18	.00	15.51
89277	.10	.00	.00	49.74	.33	11.07	28.32	4.45	13.90	15.52	42.22	.00	15.52
89279	.05	.00	.00	49.22	.33	11.07	28.32	4.47	13.98	15.54	42.30	.00	15.54
89284	.02	.00	.00	48.00	.33	11.07	28.32	4.53	14.17	15.60	42.49	.00	15.60
89285	.02	.00	.00	46.95	.33	11.07	28.32	4.55	14.21	15.62	42.53	.00	15.62
89297	.02	.00	.00	44.61	.33	11.07	28.32	4.73	14.65	15.80	42.97	.00	15.80
89298	.06	.00	.00	42.27	.32	11.07	28.32	4.76	14.68	15.83	43.01	.00	15.83
89299	.01	.00	.00	41.90	.32	11.07	28.32	4.78	14.72	15.85	43.04	.00	15.85
89300	.02	.00	.00	41.54	.32	11.07	28.32	4.80	14.75	15.87	43.08	.00	15.87
89301	.06	.00	.00	41.18	.33	11.07	28.32	4.82	14.79	15.89	43.11	.00	15.89
89304	.17	.00	.00	40.46	.33	11.07	28.32	4.88	14.89	15.95	43.22	.00	15.95
89307	.02	.00	.00	39.39	.33	11.07	28.32	4.94	14.99	16.01	43.32	.00	16.01
89308	.01	.00	.00	38.67	.33	11.07	28.32	4.97	15.03	16.04	43.35	.00	16.04
89309	.02	.00	.00	38.32	.33	11.07	28.32	4.98	15.06	16.05	43.38	.00	16.05
89311	.01	.00	.00	37.79	.33	11.07	28.32	5.02	15.13	16.09	43.45	.00	16.09
89312	.01	.00	.00	37.26	.33	11.07	28.32	5.05	15.16	16.12	43.48	.00	16.12
89317	.02	.00	.00	36.23	.33	11.07	28.32	5.12	15.31	16.19	43.64	.00	16.19
89318	.04	.00	.00	35.20	.33	11.07	28.32	5.14	15.35	16.22	43.67	.00	16.22
89319	.03	.00	.00	34.86	.33	11.07	28.32	5.17	15.38	16.24	43.70	.00	16.24
89321	.01	.00	.00	34.36	.32	11.07	28.32	5.20	15.44	16.27	43.76	.00	16.27

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	1.258 IN
DEEP PERCOLATION	=	.266 IN
ACTUAL PLANT EVAP	=	11.075 IN
ACTUAL SOIL EVAP	=	5.481 IN
TOTAL ET	=	16.556 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	16.556 IN
BEGIN SOIL WATER	=	6.120 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.32	.00	.00	.04	3.27	.04	3.27	.00	.04		
90084	.05	.00	.00	32.55	.32	.00	.00	.09	3.34	.09	3.34	.00	.09		
90085	.09	.00	.00	32.87	.32	.00	.00	.16	3.42	.16	3.42	.00	.16		
90086	.12	.01	.00	33.19	.32	.00	.00	.23	3.50	.23	3.50	.00	.23		
90087	.15	.02	.00	33.51	.32	.00	.00	.31	3.58	.31	3.58	.00	.31		
90088	.18	.02	.00	33.84	.32	.00	.00	.39	3.66	.39	3.66	.00	.39		
90089	.22	.03	.00	34.17	.33	.00	.00	.48	3.74	.48	3.74	.00	.48		
90090	.25	.05	.00	34.50	.33	.00	.00	.56	3.82	.56	3.82	.00	.56		
90091	.28	.06	.00	34.83	.33	.00	.00	.64	3.91	.64	3.91	.00	.64		
90092	.32	.07	.00	35.17	.33	.00	.00	.73	3.99	.73	3.99	.00	.73		
90093	.35	.09	.00	35.51	.33	.00	.00	.82	4.08	.82	4.08	.00	.82		
90094	.32	.08	.00	35.85	.34	.00	.00	.91	4.17	.91	4.17	.00	.91		
90102	.08	.00	.00	37.41	.34	.00	.00	1.08	4.93	1.08	4.93	.00	1.08		
90104	.20	.00	.00	39.17	.34	.00	.00	1.19	5.12	1.19	5.12	.00	1.19		
90105	.02	.00	.00	39.71	.34	.00	.00	1.23	5.22	1.23	5.22	.00	1.23		
90108	.09	.00	.00	40.43	.34	.00	.00	1.33	5.53	1.33	5.53	.00	1.33		
90112	.14	.00	.00	41.69	.34	.00	.00	1.48	5.95	1.48	5.95	.00	1.48		
90113	.03	.00	.00	42.59	.34	.00	.00	1.51	6.06	1.51	6.06	.00	1.51		
90114	.77	.00	.00	42.96	.35	.00	.00	1.62	6.17	1.62	6.17	.00	1.62		
90115	.01	.00	.00	43.32	.35	.00	.00	1.69	6.27	1.69	6.27	.00	1.69		
90116	.02	.00	.00	43.68	.35	.00	.00	1.79	6.38	1.79	6.38	.00	1.79		
90117	.04	.00	.00	44.04	.34	.00	.00	1.88	6.49	1.88	6.49	.00	1.88		
90118	.06	.00	.00	44.40	.34	.00	.00	1.93	6.60	1.93	6.60	.00	1.93		
90119	.13	.00	.00	44.76	.35	.00	.00	2.03	6.71	2.03	6.71	.00	2.03		
90120	.01	.00	.00	45.12	.34	.03	.04	2.09	6.82	2.12	6.86	.00	2.12		
90122	.07	.00	.00	45.66	.34	.09	.11	2.18	7.05	2.27	7.16	.00	2.27		
90124	.02	.00	.00	46.38	.34	.16	.20	2.26	7.27	2.42	7.47	.00	2.42		
90127	.01	.00	.00	47.27	.34	.25	.33	2.34	7.61	2.59	7.95	.00	2.59		
90128	.03	.00	.00	47.97	.34	.28	.38	2.37	7.73	2.64	8.11	.00	2.64		
90129	.07	.00	.00	48.32	.34	.31	.43	2.42	7.84	2.73	8.28	.00	2.73		
90130	.01	.00	.00	48.67	.34	.34	.48	2.45	7.96	2.79	8.45	.00	2.79		
90131	.03	.00	.00	49.02	.34	.37	.54	2.48	8.08	2.84	8.62	.00	2.84		
90132	.01	.00	.00	49.36	.34	.39	.59	2.51	8.20	2.90	8.79	.00	2.90		
90133	.31	.00	.00	49.70	.34	.43	.64	2.63	8.32	3.06	8.96	.00	3.06		
90134	.13	.00	.00	50.04	.34	.46	.69	2.73	8.44	3.20	9.14	.00	3.20		
90135	.17	.00	.00	50.38	.34	.50	.75	2.82	8.57	3.32	9.31	.00	3.32		
90137	.21	.00	.00	50.89	.34	.57	.86	3.00	8.82	3.57	9.67	.00	3.57		
90138	.12	.00	.00	51.39	.34	.61	.91	3.11	8.94	3.72	9.86	.00	3.72		
90139	.03	.00	.00	51.72	.34	.64	.97	3.19	9.07	3.83	10.04	.00	3.83		
90140	.90	.00	.00	52.04	.35	.70	1.02	3.32	9.20	4.02	10.23	.00	4.02		
90141	.01	.00	.00	52.37	.35	.75	1.08	3.40	9.33	4.15	10.41	.00	4.15		
90143	.11	.00	.00	52.85	.34	.85	1.20	3.56	9.60	4.41	10.80	.00	4.41		
90144	.03	.00	.00	53.32	.34	.90	1.25	3.64	9.73	4.53	10.99	.00	4.53		
90145	.15	.00	.00	53.63	.34	.94	1.31	3.76	9.87	4.70	11.18	.00	4.70		
90146	.01	.00	.00	53.94	.34	.99	1.37	3.81	10.01	4.80	11.38	.00	4.80		
90148	.02	.00	.00	54.40	.34	1.06	1.49	3.90	10.29	4.96	11.78	.00	4.96		
90149	.24	.00	.00	54.85	.34	1.11	1.56	4.04	10.43	5.15	11.98	.00	5.15		
90150	.55	.00	.00	55.14	.34	1.16	1.62	4.17	10.57	5.34	12.18	.00	5.34		
90151	.26	.00	.00	55.44	.35	1.22	1.68	4.31	10.71	5.53	12.39	.00	5.53		
90152	.01	.00	.00	55.72	.34	1.28	1.74	4.43	10.85	5.71	12.59	.00	5.71		
90158	.05	.00	.00	56.69	.34	1.53	2.12	4.64	11.74	6.17	13.86	.00	6.17		
90159	.01	.00	.00	57.63	.33	1.56	2.19	4.68	11.89	6.24	14.08	.00	6.24		

90160	.20	.00	.00	57.88	.33	1.60	2.26	4.83	12.04	6.43	14.29	.00	6.43
90161	.01	.00	.00	58.13	.33	1.63	2.32	4.87	12.19	6.50	14.51	.00	6.50
90162	.01	.00	.00	58.38	.33	1.67	2.39	4.90	12.34	6.57	14.73	.00	6.57
90164	.02	.00	.00	58.74	.33	1.72	2.52	4.96	12.65	6.69	15.17	.00	6.69
90165	.15	.00	.00	59.09	.33	1.76	2.59	5.08	12.81	6.84	15.40	.00	6.84
90166	.29	.00	.00	59.32	.33	1.79	2.66	5.24	12.96	7.03	15.62	.00	7.03
90167	.28	.00	.00	59.54	.33	1.83	2.73	5.37	13.12	7.20	15.85	.00	7.20
90169	.02	.00	.00	59.86	.33	1.90	2.86	5.52	13.44	7.42	16.30	.00	7.42
90176	.13	.00	.00	60.76	.33	2.05	3.35	5.80	14.56	7.84	17.91	.00	7.84
90178	.01	.00	.00	61.56	.33	2.08	3.49	5.85	14.88	7.92	18.38	.00	7.92
90179	.02	.00	.00	61.81	.32	2.09	3.56	5.89	15.05	7.98	18.61	.00	7.98
90183	.18	.00	.00	62.18	.32	2.14	3.85	6.09	15.70	8.22	19.55	.00	8.22
90184	.01	.00	.00	62.52	.32	2.14	3.92	6.11	15.87	8.26	19.79	.00	8.26
90188	.05	.00	.00	62.82	.32	2.17	4.21	6.20	16.53	8.38	20.74	.00	8.38
90193	.01	.00	.00	63.26	.32	2.19	4.57	6.29	17.35	8.48	21.92	.00	8.48
90201	.01	.00	.00	63.69	.32	2.21	5.14	6.32	18.67	8.53	23.81	.00	8.53
90205	.02	.00	.00	63.87	.32	2.21	5.42	6.33	19.32	8.55	24.75	.00	8.55
90207	.28	.00	.00	63.87	.32	2.23	5.56	6.49	19.65	8.72	25.21	.00	8.72
90208	.01	.00	.00	63.85	.32	2.23	5.63	6.52	19.81	8.75	25.44	.00	8.75
90209	.01	.00	.00	63.83	.32	2.24	5.70	6.54	19.97	8.78	25.67	.00	8.78
90211	.02	.00	.00	63.79	.32	2.24	5.84	6.57	20.29	8.81	26.13	.00	8.81
90212	.55	.00	.00	63.73	.33	2.27	5.91	6.73	20.45	8.99	26.36	.00	8.99
90223	.45	.00	.00	63.33	.32	2.38	6.65	7.06	22.15	9.44	28.80	.00	9.44
90229	.08	.00	.00	62.46	.32	2.45	7.03	7.32	23.03	9.77	30.06	.00	9.77
90230	.35	.00	.00	61.97	.33	2.46	7.10	7.44	23.17	9.91	30.27	.00	9.91
90231	.24	.00	.00	61.82	.33	2.49	7.16	7.58	23.32	10.06	30.48	.00	10.06
90232	.11	.00	.00	61.66	.33	2.51	7.22	7.70	23.46	10.21	30.68	.00	10.21
90233	.03	.00	.00	61.50	.33	2.52	7.28	7.79	23.60	10.31	30.88	.00	10.31
90234	.07	.00	.00	61.33	.32	2.54	7.34	7.92	23.74	10.46	31.08	.00	10.46
90235	.12	.00	.00	61.15	.32	2.55	7.40	8.02	23.88	10.57	31.28	.00	10.57
90236	.02	.00	.00	60.97	.32	2.56	7.46	8.09	24.01	10.65	31.48	.00	10.65
90237	.35	.00	.00	60.79	.33	2.58	7.52	8.22	24.15	10.80	31.67	.00	10.80
90238	.11	.00	.00	60.59	.33	2.60	7.58	8.34	24.29	10.94	31.87	.00	10.94
90239	.06	.00	.00	60.40	.33	2.61	7.64	8.44	24.42	11.05	32.06	.00	11.05
90243	.01	.00	.00	59.88	.32	2.65	7.87	8.64	24.94	11.29	32.81	.00	11.29
90246	.01	.00	.00	59.11	.32	2.66	8.03	8.73	25.32	11.38	33.35	.00	11.38
90247	.07	.00	.00	58.64	.32	2.66	8.08	8.78	25.45	11.44	33.53	.00	11.44
90248	.09	.00	.00	58.40	.32	2.66	8.14	8.85	25.57	11.52	33.71	.00	11.52
90251	.20	.00	.00	57.90	.32	2.67	8.29	9.02	25.93	11.69	34.22	.00	11.69
90253	.08	.00	.00	57.26	.32	2.68	8.40	9.11	26.16	11.79	34.56	.00	11.79
90269	.01	.00	.00	54.69	.32	2.70	9.12	9.18	27.83	11.88	36.95	.00	11.88
90270	.04	.00	.00	52.07	.32	2.70	9.16	9.22	27.92	11.91	37.08	.00	11.91
90275	.05	.00	.00	51.08	.32	2.70	9.16	9.26	28.37	11.96	37.53	.00	11.96
90276	.02	.00	.00	50.08	.32	2.70	9.16	9.27	28.45	11.97	37.61	.00	11.97
90277	.02	.00	.00	49.74	.32	2.70	9.16	9.29	28.53	11.99	37.69	.00	11.99
90278	.03	.00	.00	49.39	.32	2.70	9.16	9.31	28.62	12.01	37.78	.00	12.01
90279	.01	.00	.00	49.05	.32	2.70	9.16	9.33	28.70	12.04	37.86	.00	12.04
90289	.12	.00	.00	47.12	.32	2.71	9.16	9.41	29.51	12.13	38.67	.00	12.13
90292	.03	.00	.00	44.80	.32	2.71	9.16	9.46	29.74	12.17	38.90	.00	12.17
90305	.02	.00	.00	41.91	.32	2.72	9.16	9.50	30.68	12.21	39.84	.00	12.21
90308	.07	.00	.00	39.03	.32	2.72	9.16	9.56	30.86	12.27	40.02	.00	12.27
90309	.24	.00	.00	38.32	.32	2.72	9.16	9.62	30.92	12.33	40.08	.00	12.33
90310	.02	.00	.00	37.97	.32	2.72	9.16	9.63	30.98	12.35	40.14	.00	12.35
90318	.25	.00	.00	36.40	.32	2.72	9.16	9.76	31.40	12.48	40.56	.00	12.48
90319	.03	.00	.00	34.86	.33	2.72	9.16	9.79	31.45	12.50	40.61	.00	12.50
90324	.12	.00	.00	33.87	.33	2.72	9.16	9.89	31.67	12.60	40.83	.00	12.60

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	=	13.380 IN
PRECIP., NET	=	13.380 IN
PREDICTED RUNOFF	=	.431 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	2.717 IN
ACTUAL SOIL EVAP	=	10.231 IN
TOTAL ET	=	12.949 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.949 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN

IRRIGATION APPLIED= .000 IN
WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.01	.00	25.55	.32	.00	.00	.07	3.27	.07	3.27	.00	.07		
91084	.06	.00	.00	32.55	.32	.00	.00	.13	3.34	.13	3.34	.00	.13		
91085	.29	.06	.00	32.87	.32	.00	.00	.20	3.42	.20	3.42	.00	.20		
91086	.17	.02	.00	33.19	.32	.00	.00	.28	3.50	.28	3.50	.00	.28		
91087	.15	.02	.00	33.51	.33	.00	.00	.36	3.58	.36	3.58	.00	.36		
91088	.19	.03	.00	33.84	.33	.00	.00	.44	3.66	.44	3.66	.00	.44		
91089	.22	.04	.00	34.17	.33	.00	.00	.52	3.74	.52	3.74	.00	.52		
91090	.25	.05	.00	34.50	.33	.00	.00	.60	3.82	.60	3.82	.00	.60		
91091	.28	.06	.00	34.83	.33	.00	.00	.69	3.91	.69	3.91	.00	.69		
91092	.02	.00	.00	35.17	.33	.00	.00	.71	3.99	.71	3.99	.00	.71		
91093	.02	.00	.00	35.51	.33	.00	.00	.72	4.08	.72	4.08	.00	.72		
91094	.05	.00	.00	35.85	.33	.00	.00	.76	4.17	.76	4.17	.00	.76		
91096	.21	.04	.00	36.36	.33	.00	.00	.87	4.35	.87	4.35	.00	.87		
91100	.02	.00	.00	37.41	.33	.00	.00	.92	4.73	.92	4.73	.00	.92		
91102	.01	.00	.00	38.46	.33	.00	.00	.96	4.92	.96	4.92	.00	.96		
91105	.05	.00	.00	39.35	.33	.00	.00	1.02	5.21	1.02	5.21	.00	1.02		
91106	.05	.00	.00	40.07	.33	.00	.00	1.06	5.32	1.06	5.32	.00	1.06		
91107	.10	.00	.00	40.43	.33	.00	.00	1.14	5.42	1.14	5.42	.00	1.14		
91108	.03	.00	.00	40.79	.33	.00	.00	1.17	5.52	1.17	5.52	.00	1.17		
91109	.03	.00	.00	41.15	.33	.00	.00	1.19	5.62	1.19	5.62	.00	1.19		
91116	.01	.00	.00	42.59	.33	.00	.00	1.28	6.38	1.28	6.38	.00	1.28		
91119	.05	.00	.00	44.40	.33	.00	.00	1.35	6.72	1.35	6.72	.00	1.35		
91120	.09	.00	.00	45.12	.33	.01	.03	1.42	6.83	1.43	6.86	.00	1.43		
91121	.01	.00	.00	45.48	.33	.03	.06	1.44	6.95	1.47	7.01	.00	1.47		
91123	.02	.00	.00	46.02	.33	.06	.13	1.47	7.18	1.52	7.31	.00	1.52		
91128	.12	.00	.00	47.26	.33	.13	.32	1.60	7.78	1.73	8.11	.00	1.73		
91129	.22	.00	.00	48.32	.33	.15	.36	1.73	7.91	1.87	8.27	.00	1.87		
91130	.25	.00	.00	48.67	.33	.17	.41	1.85	8.03	2.02	8.44	.00	2.02		
91131	.37	.00	.00	49.02	.34	.19	.45	1.98	8.16	2.17	8.61	.00	2.17		
91132	.01	.00	.00	49.36	.34	.22	.49	2.02	8.29	2.24	8.78	.00	2.24		
91134	.21	.00	.00	49.87	.34	.27	.58	2.18	8.55	2.45	9.12	.00	2.45		
91137	.16	.00	.00	50.72	.33	.34	.71	2.37	8.95	2.71	9.66	.00	2.71		
91138	.55	.00	.00	51.39	.34	.37	.75	2.50	9.08	2.87	9.84	.00	2.87		
91139	.38	.00	.00	51.72	.34	.41	.80	2.63	9.22	3.04	10.02	.00	3.04		
91140	.02	.00	.00	52.04	.34	.45	.85	2.72	9.36	3.17	10.21	.00	3.17		
91141	.01	.00	.00	52.37	.34	.49	.89	2.80	9.50	3.28	10.39	.00	3.28		
91145	.25	.00	.00	53.16	.34	.61	1.08	3.05	10.08	3.66	11.16	.00	3.66		
91147	.28	.00	.00	54.09	.34	.68	1.18	3.22	10.37	3.90	11.55	.00	3.90		
91148	.01	.00	.00	54.55	.34	.71	1.23	3.32	10.52	4.03	11.75	.00	4.03		
91149	.02	.00	.00	54.85	.34	.74	1.28	3.39	10.67	4.13	11.95	.00	4.13		
91150	.12	.00	.00	55.14	.34	.77	1.33	3.48	10.82	4.25	12.15	.00	4.25		
91151	.03	.00	.00	55.44	.33	.80	1.38	3.56	10.97	4.35	12.35	.00	4.35		
91154	.03	.00	.00	56.01	.33	.87	1.53	3.68	11.44	4.54	12.97	.00	4.54		
91155	.12	.00	.00	56.56	.33	.89	1.58	3.77	11.59	4.66	13.18	.00	4.66		
91156	.57	.00	.00	56.84	.34	.93	1.64	3.92	11.75	4.85	13.39	.00	4.85		
91157	.15	.00	.00	57.10	.34	.97	1.69	4.06	11.91	5.03	13.60	.00	5.03		
91158	.12	.00	.00	57.37	.34	1.00	1.74	4.20	12.07	5.20	13.81	.00	5.20		
91159	.01	.00	.00	57.63	.33	1.03	1.80	4.30	12.23	5.33	14.03	.00	5.33		
91171	.91	.00	.00	59.17	.33	1.28	2.46	4.74	14.23	6.03	16.69	.00	6.03		
91173	.03	.00	.00	60.67	.34	1.35	2.57	4.92	14.57	6.27	17.14	.00	6.27		
91174	.02	.00	.00	60.95	.33	1.38	2.63	4.98	14.74	6.36	17.37	.00	6.36		
91175	.02	.00	.00	61.14	.33	1.41	2.68	5.03	14.92	6.43	17.60	.00	6.43		
91176	.03	.00	.00	61.31	.33	1.43	2.74	5.09	15.09	6.52	17.83	.00	6.52		
91177	.01	.00	.00	61.48	.33	1.46	2.80	5.12	15.26	6.58	18.06	.00	6.58		
91179	.11	.00	.00	61.73	.33	1.50	2.91	5.23	15.61	6.73	18.53	.00	6.73		
91181	.05	.00	.00	62.03	.33	1.54	3.03	5.30	15.96	6.84	18.99	.00	6.84		
91182	.02	.00	.00	62.25	.33	1.56	3.09	5.34	16.14	6.90	19.23	.00	6.90		
91191	.10	.00	.00	62.86	.33	1.68	3.61	5.56	17.73	7.24	21.34	.00	7.24		
91195	.03	.00	.00	63.46	.32	1.71	3.85	5.63	18.43	7.34	22.28	.00	7.34		
91206	.22	.00	.00	63.80	.32	1.76	4.49	5.94	20.36	7.70	24.86	.00	7.70		
91207	.12	.00	.00	63.87	.32	1.77	4.54	6.03	20.53	7.80	25.07	.00	7.80		
91213	.29	.00	.00	63.78	.32	1.79	4.88	6.27	21.56	8.05	26.44	.00	8.05		
91214	.02	.00	.00	63.63	.32	1.79	4.94	6.28	21.72	8.07	26.66	.00	8.07		
91218	.06	.00	.00	63.47	.32	1.81	5.16	6.37	22.39	8.18	27.55	.00	8.18		

91235	.09	.00	.00	62.33	.32	1.82	6.04	6.52	25.06	8.34	31.10	.00	8.34
91239	.28	.00	.00	60.69	.32	1.83	6.23	6.68	25.64	8.51	31.87	.00	8.51
91240	.61	.00	.00	60.20	.33	1.85	6.28	6.77	25.78	8.62	32.06	.00	8.62
91251	.24	.00	.00	58.86	.33	1.96	6.77	7.21	27.25	9.17	34.02	.00	9.17
91252	.03	.00	.00	57.39	.32	1.97	6.81	7.27	27.38	9.23	34.19	.00	9.23
91254	.84	.00	.00	56.99	.33	2.00	6.89	7.41	27.62	9.41	34.51	.00	9.41
91256	.01	.00	.00	56.45	.33	2.04	6.97	7.56	27.86	9.60	34.84	.00	9.60
91257	.19	.00	.00	56.03	.33	2.06	7.01	7.65	27.98	9.71	34.99	.00	9.71
91272	.11	.00	.00	53.63	.33	2.20	7.47	8.16	29.58	10.35	37.05	.00	10.35
91277	.10	.00	.00	50.41	.32	2.20	7.47	8.30	30.04	10.50	37.51	.00	10.50
91290	.06	.00	.00	47.29	.32	2.20	7.47	8.50	31.16	10.70	38.64	.00	10.70
91291	.01	.00	.00	44.80	.32	2.20	7.47	8.53	31.25	10.72	38.72	.00	10.72
91295	.12	.00	.00	43.89	.32	2.20	7.47	8.64	31.57	10.84	39.04	.00	10.84
91298	.01	.00	.00	42.63	.32	2.20	7.47	8.68	31.79	10.88	39.27	.00	10.88
91299	.18	.00	.00	41.90	.32	2.20	7.47	8.75	31.87	10.95	39.34	.00	10.95
91300	.28	.00	.00	41.54	.33	2.20	7.47	8.83	31.94	11.02	39.41	.00	11.02
91301	.06	.00	.00	41.18	.33	2.20	7.47	8.87	32.01	11.07	39.48	.00	11.07
91302	.01	.00	.00	40.82	.33	2.20	7.47	8.90	32.07	11.10	39.55	.00	11.10
91304	.24	.00	.00	40.28	.33	2.20	7.47	8.99	32.21	11.19	39.68	.00	11.19
91305	.12	.00	.00	39.74	.33	2.20	7.47	9.05	32.27	11.25	39.74	.00	11.25
91309	.18	.00	.00	38.85	.33	2.20	7.47	9.22	32.51	11.42	39.99	.00	11.42
91310	.14	.00	.00	37.97	.33	2.20	7.47	9.26	32.57	11.46	40.04	.00	11.46
91313	.09	.00	.00	37.26	.33	2.20	7.47	9.43	32.74	11.63	40.21	.00	11.63
91316	.04	.00	.00	36.22	.33	2.20	7.47	9.57	32.89	11.77	40.37	.00	11.77
91317	.06	.00	.00	35.54	.33	2.20	7.47	9.62	32.94	11.82	40.42	.00	11.82
91322	.07	.00	.00	34.53	.33	2.20	7.47	9.78	33.18	11.98	40.65	.00	11.98
91323	.04	.00	.00	33.54	.33	2.20	7.47	9.81	33.22	12.01	40.70	.00	12.01
91324	.12	.00	.00	33.22	.33	2.20	7.47	9.86	33.27	12.05	40.74	.00	12.05
91325	.09	.00	.00	32.90	.33	2.20	7.47	9.90	33.31	12.10	40.78	.00	12.10
91326	.01	.00	.00	32.58	.33	2.20	7.47	9.94	33.35	12.14	40.82	.00	12.14

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	.315 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	2.198 IN
ACTUAL SOIL EVAP	=	10.497 IN
TOTAL ET	=	12.695 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.695 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	.668
DEEP PERCOLATION	=	.089
TOTAL ET	=	14.066
IRRIGATION APPLIED	=	.000
AVG. AVAL. STORAGE	=	15.473 IN
FINAL AVAL. STORAGE	=	16.800 IN

FINAL STORAGE FOR EACH FRACTION

.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

RAMSAY FLATS OEEP-TILL SIMULATION

1989-1991 (INCREASED LAI, LOW SOIL EVAP, OELAYED GROWTH)

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.436	.000	25.103	.000
FEB	.000	.000	.000	.391	.000	24.662	.000
MAR	1.245	1.245	.221	.574	.000	24.424	.000
APR	3.735	3.735	1.037	1.140	.266	26.165	.000
MAY	1.480	1.480	.000	5.545	.000	24.055	.000
JUN	.920	.920	.000	3.785	.000	20.186	.000
JUL	1.070	1.070	.000	.877	.000	19.306	.000
AUG	2.180	2.180	.000	1.837	.000	19.571	.000
SEP	.300	.300	.000	.897	.000	19.400	.000
OCT	.860	.860	.000	.466	.000	19.555	.000
NOV	.170	.170	.000	.472	.000	19.478	.000
DEC	.000	.000	.000	.135	.000	19.229	.000
TOT	11.960	11.960	1.258	16.556	.266	21.761	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	19.200	.000
FEB	.000	.000	.000	.000	.000	19.200	.000
MAR	1.115	1.115	.130	.559	.000	19.239	.000
APR	2.875	2.875	.302	1.559	.000	20.296	.000
MAY	3.500	3.500	.000	3.415	.000	20.387	.000
JUN	1.210	1.210	.000	2.504	.000	19.913	.000
JUL	1.150	1.150	.000	.956	.000	19.278	.000
AUG	2.000	2.000	.000	2.294	.000	19.477	.000
SEP	.500	.500	.000	.632	.000	19.224	.000
OCT	.280	.280	.000	.280	.000	19.207	.000
NOV	.750	.750	.000	.545	.000	19.409	.000
DEC	.000	.000	.000	.205	.000	19.258	.000
TOT	13.380	13.380	.431	12.949	.000	19.507	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	19.200	.000
FEB	.000	.000	.000	.000	.000	19.200	.000
MAR	1.475	1.475	.219	.605	.000	19.284	.000
APR	1.025	1.025	.096	.827	.000	20.006	.000
MAY	3.040	3.040	.000	2.920	.000	20.125	.000
JUN	2.180	2.180	.000	2.486	.000	19.927	.000
JUL	.490	.490	.000	1.034	.000	19.401	.000
AUG	1.350	1.350	.000	.935	.000	19.300	.000
SEP	1.420	1.420	.000	1.562	.000	19.652	.000
OCT	1.070	1.070	.000	.819	.000	19.407	.000
NOV	.960	.960	.000	1.152	.000	19.718	.000
DEC	.000	.000	.000	.354	.000	19.334	.000
TOT	13.010	13.010	.315	12.695	.000	19.546	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.145	.000	21.168	.000
FEB	.000	.000	.000	.130	.000	21.021	.000
MAR	1.278	1.278	.190	.579	.000	20.982	.000
APR	2.545	2.545	.478	1.175	.089	22.156	.000
MAY	2.673	2.673	.000	3.960	.000	21.522	.000
JUN	1.437	1.437	.000	2.925	.000	20.009	.000
JUL	.903	.903	.000	.956	.000	19.328	.000
AUG	1.843	1.843	.000	1.689	.000	19.449	.000
SEP	.740	.740	.000	1.031	.000	19.425	.000
OCT	.737	.737	.000	.521	.000	19.390	.000
NOV	.627	.627	.000	.723	.000	19.535	.000
DEC	.000	.000	.000	.231	.000	19.274	.000
TOT	12.783	12.783	.668	14.066	.089	20.271	.000

****
SNOW NOTICE
****
DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf05ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

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CARD   1:SILVER BOW CREEK RI/FS
CARD   2:RAMSAY FLATS CONTROL PLOT
CARD   3:1989-1991 (LOW LAI, LOW SOIL EVAP)
CARD   4:      89      91       2       1       0
CARD   5:    .200    .350    .450 100.0002000.000
CARD   6:       2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:       1   1.000    .450
CARD  14:       3
CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  16:       1   1.000
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (LOW LAI, LOW SOIL EVAP)

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.05
2	.010	2.65	.09
3	.030	1.80	.26
4	.400	1.60	.45
5	.200	2.65	.15

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600	ACRES
SLOPE LENGTH	1450.00	FT
AVERAGE SLOPE	.0199	

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.450

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .22 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .30 TONS/ACRE
ENRICHMENT RATIO 1.034

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED 1.04 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 2.14 TONS/ACRE
ENRICHMENT RATIO 1.001

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
13 STORMS PRODUCED 1.26 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 2.44 TONS/ACRE
ENRICHMENT RATIO 1.005

MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
5 STORMS PRODUCED .13 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .17 TONS/ACRE
ENRICHMENT RATIO 1.055

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
4 STORMS PRODUCED .31 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .52 TONS/ACRE
ENRICHMENT RATIO 1.015

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
9 STORMS PRODUCED .45 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .69 TONS/ACRE
ENRICHMENT RATIO 1.025

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .22 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .30 TONS/ACRE
ENRICHMENT RATIO 1.045

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .10 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .15 TONS/ACRE
ENRICHMENT RATIO 1.028

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1991

11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991

94 STORMS PRODUCED 13.01 IN. OF RAINFALL
9 STORMS PRODUCED .32 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .45 TONS/ACRE
ENRICHMENT RATIO 1.039

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
RAMSAY FLATS CONTROL PLOT
1989-1991 (LOW LAI, LOW SOIL EVAP)

STORM SUMMARY

314 STORMS PRODUCED 38.35 IN. OF RAINFALL
31 STORMS PRODUCED 2.03 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.05	8715.	.0514	.0008	824.
2	.09	15449.	.0912	.0015	1461.
3	.26	43174.	.2548	.0041	4084.
4	.45	73928.	.4363	.0070	6993.
5	.14	23133.	.1365	.0022	2188.
TOTAL		164399.	.9703	.0155	15550.

TOTAL SOIL LOSS FOR AREA 3.58 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES

AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.203
SILT	.355
SAND	.443
ORGANIC MATTER	.005

INDEX OF SPECIFIC SURFACE 27.46 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.013

ROCKER
GLEAMS HYDROLOGY RUNS
PARAMETER FILES

RF06
RF07

```
SILVER BOW CREEK
ROCKER CONTROL SIMULATION
1989-1991
   89001        1        0        0        0        0        0        0        1
0
      50

   22.96       .5      .85      3.3       40     .015      2.0      6.0
       0        1      6.0
    0.40
    0.19
     0.1
     2.8
      .1
     5.0
    10.0
    38.0     27.0     44.0     57.0     63.0     75.0     85.0     75.0     71.0     57.0
    47.0     36.0
    16.0      3.0     21.0     29.0     35.0     44.0     49.0     45.0     38.0     31.0
    26.0     15.0
   150.0    230.0    320.0    370.0    430.0    500.0    640.0    520.0    380.0    270.0
   140.0    130.0
      89       91        3
      79     1070     1366             60.0        1       70      270

      79     2070     2366             60.0        1       70      270

      79     3070     3366             60.0        1       70      270

       0
      79        7
     0.0     00.0
      .1      .05
      .2       .1
      .7       .1
      .8      .15
      .9      .08
     1.0      0.0
       0        0
       0        0
      -1        0
```

```
SILVER BOW CREEK
ROCKER DEEP-TILL SIMULATION
1989-1991
   89001        1        0        0        0        0        0        0        1
0
      50

   22.96       .5      .85      3.3       40     .015      2.0     36.0
       0        2     24.0     36.0
    0.40     0.40
    0.19     0.16
     0.1      0.1
     2.8      2.8
      .1       .1
     5.0      5.0
    10.0     10.0
    38.0     27.0     44.0     57.0     63.0     75.0     85.0     75.0     71.0     57.0
    47.0     36.0
    16.0      3.0     21.0     29.0     35.0     44.0     49.0     45.0     38.0     31.0
    26.0     15.0
   150.0    230.0    320.0    370.0    430.0    500.0    640.0    520.0    380.0    270.0
   140.0    130.0
      89       91        3
      79     1070     1366                60.0        1       70      270

      79     2070     2366                60.0        1       70      270

      79     3070     3366                60.0        1       70      270

       0
      79        7
     0.0     00.0
      .1      2.0
      .2      2.8
      .7      2.8
      .8      1.8
      .9       .9
     1.0      0.0
       0        0
       0        0
      -1        0
```

ROCKER
GLEAMS EROSION RUNS
PARAMETER FILES

RF06
RF07

```
SILVER BOW CREEK RI/FS
ROCKER CONTROL PLOT
1989-1991
      89        91         2         1         0
   100.0
       2     22.96
  1400.0      .015   1450.0       .3
       1       1.0      .06
       3
     001
         1
         1
         1      1.0
     1.0
     1.0
    .015
     1.0
     1.0
    .015
     1.0
     1.0
    .015
```

```
SILVER BOW CREEK RI/FS
ROCKER DEEP-PLOW PLOT
1989-1991
      89       91        2        1        0
   100.0
       2    22.96
  1400.0     .015  1450.0       .3
       1      1.0     .06
       3
     001
       1
       1
       1      1.0
      .2
     1.0
    .015
      .2
     1.0
    .015
      .2
     1.0
    .015
```

ROCKER
GLEAMS HYDROLOGY/EROSION
OUTPUT

RF06

HYDROLOGY INPUT PARAMETER FILENAME: rf06.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
ROCKER CONTROL SIMULATION
1989-1991

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	70	.00
0	1	99	.05
0	1	129	.10
0	1	277	.10
0	1	306	.15
0	1	336	.08
0	1	366	.00
0	2	70	.00
0	2	99	.05
0	2	129	.10
0	2	277	.10
0	2	306	.15
0	2	336	.08
0	2	366	.00
0	3	70	.00
0	3	99	.05
0	3	129	.10
0	3	277	.10
0	3	306	.15
0	3	336	.08
0	3	366	.00

FIELD AREA	=	22.960 ACRES
ROOTING DEPTH	=	6.000 IN
SATURATED CONDUCTIVITY	=	.500 IN/HR
AVG. FUL	=	.300
AVG. FIELD CAPACITY	=	.190 IN/IN
INITIAL STORAGE FRACTION	=	.850
EVAPORATION COEFFICIENT	=	3.300
AVERAGE POROSITY	=	.400 CC/CC
SCS CURVE NUMBER	=	40.000
CHANNEL SLOPE	=	.015 FT/FT
WATERSHED LEN/WIDTH RATIO	=	2.000
PEAK FLOW RATE COEFFICIENT	=	34.276
PEAK FLOW RATE EXPONENT	=	.868
UPPER LIMIT OF STORAGE	=	1.800 IN
AVG. 15-BAR WATER CONTENT	=	.100 IN/IN
INITIAL SOIL WATER STORAGE	=	.459 IN
FRAC. P.A.W. TO BEGIN IRR.	=	.000
FRAC. P.A.W. TO END IRR.	=	.000

UPPER LIMIT OF STORAGES, IN

.118	.841	.841

INITIAL PLANT AVAILABLE STORAGE, IN

.030	.214	.214

POROSITY BY LAYER (CC/CC)

.400	.400	.400

FUL BY LAYER (IN/IN)

.300	.300	.300

FEILD CAPACITY BY LAYER (IN/IN)

.190	.190	.190

FIELD CAPACITY BY LAYER (IN)

.075	.533	.533

15-BAR WATER CONTENT BY LAYER (IN/IN)

.100	.100	.100

WATER CONTENT AT WILT. PT. BY LAYER (IN)

.039	.280	.280

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.11	.00	.00	.48	1.82	.48	1.82	.00	.48		
89084	.05	.00	.00	32.55	.10	.00	.00	.52	1.86	.52	1.86	.00	.52		
89085	.17	.02	.00	32.87	.12	.00	.00	.56	1.90	.56	1.90	.00	.56		
89086	.12	.01	.00	33.19	.13	.00	.00	.64	1.98	.64	1.98	.00	.64		
89087	.20	.03	.00	33.51	.14	.00	.00	.72	2.06	.72	2.06	.00	.72		
89088	.19	.03	.00	33.84	.15	.00	.00	.80	2.14	.80	2.14	.00	.80		
89089	.23	.05	.00	34.17	.17	.00	.00	.88	2.22	.88	2.22	.00	.88		
89090	.26	.06	.00	34.50	.19	.00	.00	.96	2.30	.97	2.30	.00	.97		
89091	.28	.07	.12	34.83	.19	.00	.00	1.05	2.39	1.05	2.39	.00	1.05		
89092	.37	.11	.17	35.17	.19	.00	.00	1.14	2.47	1.14	2.48	.00	1.14		
89093	.36	.11	.16	35.51	.19	.00	.00	1.22	2.56	1.23	2.56	.00	1.23		
89094	.38	.12	.17	35.85	.19	.00	.00	1.31	2.65	1.32	2.65	.00	1.32		
89095	.42	.14	.19	36.19	.19	.00	.00	1.40	2.74	1.41	2.75	.00	1.41		
89096	.45	.16	.20	36.54	.19	.00	.00	1.50	2.84	1.50	2.84	.00	1.50		
89097	.49	.18	.21	36.88	.19	.00	.00	1.59	2.93	1.60	2.93	.00	1.60		
89098	.05	.00	.00	37.23	.18	.00	.00	1.69	3.03	1.69	3.03	.00	1.69		
89099	.05	.00	.00	37.58	.17	.01	.01	1.79	3.12	1.79	3.13	.00	1.79		
89100	.01	.00	.00	37.93	.16	.01	.01	1.86	3.22	1.87	3.23	.00	1.87		
89106	.05	.00	.00	39.17	.13	.01	.01	2.15	3.85	2.17	3.87	.00	2.17		
89107	.15	.00	.00	40.43	.13	.02	.02	2.26	3.96	2.28	3.98	.00	2.28		
89111	.01	.00	.00	41.33	.11	.02	.02	2.39	4.42	2.41	4.45	.00	2.41		
89112	.10	.00	.00	42.23	.11	.02	.02	2.47	4.54	2.49	4.57	.00	2.49		
89113	.18	.00	.00	42.59	.12	.02	.03	2.59	4.66	2.61	4.69	.00	2.61		
89114	.13	.00	.00	42.96	.12	.03	.03	2.69	4.79	2.72	4.81	.00	2.72		
89115	.03	.00	.00	43.32	.12	.03	.03	2.75	4.91	2.78	4.94	.00	2.78		
89117	.19	.00	.00	43.86	.12	.03	.03	2.91	5.17	2.94	5.20	.00	2.94		
89118	.02	.00	.00	44.40	.12	.03	.04	2.96	5.30	3.00	5.33	.00	3.00		
89119	.01	.00	.00	44.76	.11	.04	.04	3.00	5.43	3.04	5.47	.00	3.04		
89122	.02	.00	.00	45.48	.10	.04	.05	3.09	5.84	3.13	5.88	.00	3.13		
89127	.02	.00	.00	46.91	.10	.06	.06	3.09	6.55	3.16	6.61	.00	3.16		
89128	.06	.00	.00	47.97	.10	.06	.06	3.14	6.70	3.20	6.76	.00	3.20		
89129	.02	.00	.00	48.32	.10	.09	.06	3.14	6.85	3.24	6.91	.00	3.24		
89130	.01	.00	.00	48.67	.10	.10	.07	3.14	7.00	3.25	7.06	.00	3.25		
89131	.15	.00	.00	49.02	.10	.11	.07	3.26	7.15	3.37	7.22	.00	3.37		
89132	.01	.00	.00	49.36	.10	.11	.07	3.29	7.30	3.40	7.38	.00	3.40		
89133	.10	.00	.00	49.70	.10	.11	.08	3.37	7.46	3.48	7.54	.00	3.48		
89134	.01	.00	.00	50.04	.10	.11	.08	3.40	7.62	3.51	7.70	.00	3.51		
89135	.13	.00	.00	50.38	.11	.11	.08	3.50	7.78	3.61	7.86	.00	3.61		
89136	.01	.00	.00	50.72	.10	.11	.08	3.53	7.94	3.64	8.02	.00	3.64		
89138	.17	.00	.00	51.22	.10	.13	.09	3.66	8.27	3.79	8.36	.00	3.79		
89139	.01	.00	.00	51.72	.10	.13	.09	3.69	8.44	3.82	8.53	.00	3.82		
89143	.01	.00	.00	52.53	.10	.15	.11	3.69	9.12	3.85	9.22	.00	3.85		
89144	.04	.00	.00	53.32	.10	.15	.11	3.72	9.29	3.88	9.40	.00	3.88		
89145	.01	.00	.00	53.63	.10	.17	.11	3.72	9.47	3.90	9.58	.00	3.90		
89148	.50	.00	.00	54.25	.12	.17	.12	3.90	10.00	4.08	10.13	.00	4.08		

89149	.20	.00	.00	54.85	.16	.18	.12	4.06	10.19	4.24	10.31	.00	4.24
89153	.01	.00	.00	55.58	.14	.19	.14	4.19	10.93	4.38	11.06	.00	4.38
89154	.02	.00	.00	56.29	.13	.19	.14	4.24	11.12	4.43	11.26	.00	4.43
89161	.17	.00	.00	57.36	.12	.22	.17	4.49	12.47	4.71	12.64	.00	4.71
89166	.25	.00	.00	58.85	.11	.23	.18	4.76	13.47	4.99	13.65	.00	4.99
89167	.31	.00	.00	59.54	.13	.23	.19	4.96	13.67	5.19	13.86	.00	5.19
89168	.01	.00	.00	59.76	.12	.23	.19	5.00	13.88	5.23	14.07	.00	5.23
89171	.09	.00	.00	60.17	.12	.24	.20	5.11	14.49	5.35	14.70	.00	5.35
89175	.03	.00	.00	60.86	.11	.25	.22	5.19	15.32	5.44	15.54	.00	5.44
89178	.03	.00	.00	61.48	.10	.25	.23	5.25	15.96	5.51	16.18	.00	5.51
89193	.03	.00	.00	62.71	.10	.26	.29	5.28	19.15	5.54	19.44	.00	5.54
89194	.12	.00	.00	63.50	.10	.27	.29	5.37	19.37	5.64	19.66	.00	5.64
89197	.06	.00	.00	63.62	.10	.28	.30	5.43	20.01	5.72	20.31	.00	5.72
89198	.09	.00	.00	63.73	.10	.29	.31	5.50	20.22	5.79	20.53	.00	5.79
89203	.12	.00	.00	63.82	.10	.30	.33	5.61	21.28	5.91	21.60	.00	5.91
89204	.02	.00	.00	63.88	.10	.30	.33	5.63	21.49	5.93	21.82	.00	5.93
89205	.12	.00	.00	63.88	.11	.31	.33	5.72	21.70	6.03	22.03	.00	6.03
89208	.35	.00	.00	63.87	.11	.31	.35	5.96	22.33	6.27	22.67	.00	6.27
89209	.07	.00	.00	63.83	.13	.32	.35	6.01	22.53	6.33	22.88	.00	6.33
89211	.07	.00	.00	63.79	.12	.32	.36	6.09	22.95	6.41	23.30	.00	6.41
89212	.02	.00	.00	63.73	.13	.33	.36	6.10	23.15	6.43	23.51	.00	6.43
89213	.10	.00	.00	63.68	.13	.33	.36	6.18	23.36	6.51	23.72	.00	6.51
89220	.08	.00	.00	63.42	.12	.35	.39	6.34	24.77	6.69	25.15	.00	6.69
89221	.12	.00	.00	63.09	.12	.36	.39	6.43	24.96	6.79	25.36	.00	6.79
89223	.20	.00	.00	62.94	.12	.36	.40	6.61	25.35	6.97	25.75	.00	6.97
89224	.03	.00	.00	62.77	.12	.37	.40	6.63	25.55	7.00	25.95	.00	7.00
89225	.03	.00	.00	62.65	.12	.37	.41	6.66	25.74	7.03	26.15	.00	7.03
89230	.02	.00	.00	62.26	.11	.38	.42	6.74	26.68	7.12	27.11	.00	7.12
89231	.01	.00	.00	61.82	.11	.38	.43	6.76	26.87	7.14	27.30	.00	7.14
89232	.05	.00	.00	61.66	.11	.38	.43	6.80	27.05	7.18	27.48	.00	7.18
89233	.02	.00	.00	61.50	.11	.39	.43	6.82	27.23	7.20	27.67	.00	7.20
89235	.80	.00	.11	61.24	.15	.39	.44	7.01	27.59	7.40	28.03	.00	7.40
89236	.45	.00	.27	60.97	.19	.39	.44	7.19	27.77	7.58	28.22	.00	7.58
89237	.06	.00	.00	60.79	.18	.40	.45	7.33	27.95	7.73	28.39	.00	7.73
89238	.01	.00	.00	60.59	.16	.40	.45	7.43	28.12	7.83	28.57	.00	7.83
89239	.08	.00	.00	60.40	.16	.40	.45	7.50	28.30	7.90	28.75	.00	7.90
89240	.02	.00	.00	60.20	.15	.41	.46	7.57	28.47	7.98	28.92	.00	7.98
89241	.01	.00	.00	59.99	.14	.41	.46	7.62	28.64	8.03	29.10	.00	8.03
89242	.01	.00	.00	59.78	.14	.41	.46	7.67	28.81	8.08	29.27	.00	8.08
89243	.08	.00	.00	59.56	.14	.42	.47	7.73	28.97	8.15	29.44	.00	8.15
89245	.01	.00	.00	59.22	.13	.42	.47	7.81	29.30	8.23	29.77	.00	8.23
89252	.03	.00	.00	58.15	.11	.44	.49	7.97	30.40	8.40	30.89	.00	8.40
89253	.02	.00	.00	57.13	.10	.44	.49	8.01	30.55	8.44	31.04	.00	8.44
89260	.12	.00	.00	56.03	.10	.45	.51	8.10	31.55	8.55	32.06	.00	8.55
89262	.12	.00	.00	54.73	.10	.45	.52	8.21	31.82	8.66	32.34	.00	8.66
89274	.22	.00	.00	52.54	.10	.46	.54	8.34	33.29	8.80	33.83	.00	8.80
89275	.10	.00	.00	50.42	.12	.46	.54	8.42	33.40	8.88	33.94	.00	8.88
89276	.01	.00	.00	50.08	.12	.46	.54	8.45	33.51	8.91	34.05	.00	8.91
89277	.10	.00	.00	49.74	.12	.46	.54	8.53	33.62	8.99	34.15	.00	8.99
89279	.05	.00	.00	49.22	.12	.46	.54	8.58	33.83	9.04	34.36	.00	9.04
89284	.02	.00	.00	48.00	.11	.46	.54	8.66	34.32	9.12	34.86	.00	9.12
89285	.02	.00	.00	46.95	.11	.46	.54	8.67	34.41	9.13	34.95	.00	9.13
89297	.02	.00	.00	44.61	.10	.47	.54	8.76	35.41	9.23	35.95	.00	9.23
89298	.06	.00	.00	42.27	.10	.47	.54	8.80	35.49	9.28	36.02	.00	9.28
89299	.01	.00	.00	41.90	.10	.47	.54	8.82	35.56	9.30	36.10	.00	9.30
89300	.02	.00	.00	41.54	.10	.47	.54	8.84	35.63	9.31	36.17	.00	9.31
89301	.06	.00	.00	41.18	.10	.47	.54	8.89	35.70	9.36	36.24	.00	9.36
89304	.17	.00	.00	40.46	.11	.48	.54	8.97	35.90	9.45	36.44	.00	9.45
89307	.02	.00	.00	39.39	.11	.48	.54	9.01	36.09	9.49	36.62	.00	9.49
89308	.01	.00	.00	38.67	.11	.48	.54	9.03	36.15	9.51	36.68	.00	9.51
89309	.02	.00	.00	38.32	.11	.48	.54	9.05	36.21	9.53	36.74	.00	9.53
89311	.01	.00	.00	37.79	.11	.48	.54	9.08	36.32	9.56	36.86	.00	9.56
89312	.01	.00	.00	37.26	.11	.48	.54	9.10	36.38	9.58	36.91	.00	9.58
89317	.02	.00	.00	36.23	.10	.48	.54	9.15	36.64	9.64	37.17	.00	9.64
89318	.04	.00	.00	35.20	.10	.48	.54	9.19	36.69	9.67	37.22	.00	9.67
89319	.03	.00	.00	34.86	.10	.48	.54	9.21	36.73	9.69	37.27	.00	9.69
89321	.01	.00	.00	34.36	.10	.50	.54	9.22	36.83	9.72	37.36	.00	9.72

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREOICTEO RUNOFF	=	1.109 IN
OEEP PERCOLATION	=	1.589 IN
ACTUAL PLANT EVAP	=	.499 IN
ACTUAL SOIL EVAP	=	9.222 IN
TOTAL ET	=	9.721 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	9.721 IN
BEGIN SOIL WATER	=	.459 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

OATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.10	.00	.00	.04	3.27	.04	3.27	.00	.04		
90084	.05	.00	.00	32.55	.10	.00	.00	.09	3.34	.09	3.34	.00	.09		
90085	.09	.00	.00	32.87	.11	.00	.00	.16	3.42	.16	3.42	.00	.16		
90086	.12	.01	.00	33.19	.11	.00	.00	.23	3.50	.23	3.50	.00	.23		
90087	.15	.02	.00	33.51	.12	.00	.00	.31	3.58	.31	3.58	.00	.31		
90088	.18	.03	.00	33.84	.13	.00	.00	.39	3.66	.39	3.66	.00	.39		
90089	.22	.04	.00	34.17	.15	.00	.00	.48	3.74	.48	3.74	.00	.48		
90090	.25	.06	.00	34.50	.17	.00	.00	.56	3.82	.56	3.82	.00	.56		
90091	.28	.07	.00	34.83	.19	.00	.00	.64	3.91	.64	3.91	.00	.64		
90092	.32	.09	.13	35.17	.19	.00	.00	.73	3.99	.73	3.99	.00	.73		
90093	.35	.10	.16	35.51	.19	.00	.00	.82	4.08	.82	4.08	.00	.82		
90094	.32	.09	.14	35.85	.19	.00	.00	.91	4.17	.91	4.17	.00	.91		
90102	.08	.00	.00	37.41	.18	.01	.01	1.06	4.94	1.06	4.95	.00	1.06		
90104	.20	.00	.01	39.17	.18	.01	.01	1.17	5.15	1.18	5.16	.00	1.18		
90105	.02	.00	.00	39.71	.19	.01	.01	1.19	5.26	1.20	5.27	.00	1.20		
90108	.09	.00	.00	40.43	.19	.02	.02	1.29	5.59	1.30	5.61	.00	1.30		
90112	.14	.00	.00	41.69	.18	.02	.02	1.44	6.06	1.46	6.08	.00	1.46		
90113	.03	.00	.00	42.59	.19	.02	.02	1.46	6.18	1.48	6.21	.00	1.48		
90114	.77	.00	.62	42.96	.19	.03	.03	1.58	6.31	1.61	6.33	.00	1.61		
90115	.01	.00	.00	43.32	.18	.03	.03	1.65	6.43	1.68	6.46	.00	1.68		
90116	.02	.00	.00	43.68	.17	.03	.03	1.75	6.56	1.78	6.59	.00	1.78		
90117	.04	.00	.00	44.04	.16	.03	.03	1.84	6.69	1.87	6.72	.00	1.87		
90118	.06	.00	.00	44.40	.16	.04	.04	1.89	6.82	1.92	6.85	.00	1.92		
90119	.13	.00	.00	44.76	.16	.04	.04	1.99	6.95	2.03	6.99	.00	2.03		
90120	.01	.00	.00	45.12	.15	.04	.04	2.05	7.08	2.09	7.12	.00	2.09		
90122	.07	.00	.00	45.66	.15	.05	.05	2.14	7.35	2.19	7.40	.00	2.19		
90124	.02	.00	.00	46.38	.14	.05	.05	2.23	7.63	2.28	7.69	.00	2.28		
90127	.01	.00	.00	47.27	.13	.06	.06	2.31	8.07	2.38	8.13	.00	2.38		
90128	.03	.00	.00	47.97	.12	.07	.07	2.34	8.22	2.40	8.28	.00	2.40		
90129	.07	.00	.00	48.32	.13	.07	.07	2.39	8.37	2.46	8.44	.00	2.46		
90130	.01	.00	.00	48.67	.12	.08	.08	2.43	8.52	2.50	8.59	.00	2.50		
90131	.03	.00	.00	49.02	.12	.08	.08	2.45	8.67	2.53	8.75	.00	2.53		
90132	.01	.00	.00	49.36	.12	.08	.08	2.48	8.82	2.57	8.91	.00	2.57		
90133	.31	.00	.00	49.70	.14	.09	.09	2.64	8.98	2.73	9.07	.00	2.73		
90134	.13	.00	.00	50.04	.15	.09	.09	2.74	9.14	2.83	9.23	.00	2.83		
90135	.17	.00	.00	50.38	.15	.10	.10	2.88	9.30	2.97	9.40	.00	2.97		
90137	.21	.00	.00	50.89	.15	.11	.11	3.08	9.62	3.19	9.73	.00	3.19		
90138	.12	.00	.00	51.39	.15	.11	.11	3.18	9.79	3.29	9.90	.00	3.29		
90139	.03	.00	.00	51.72	.14	.11	.11	3.26	9.95	3.37	10.07	.00	3.37		
90140	.90	.00	.45	52.04	.19	.12	.12	3.43	10.12	3.55	10.24	.00	3.55		
90141	.01	.00	.00	52.37	.17	.12	.12	3.55	10.29	3.67	10.42	.00	3.67		
90143	.11	.00	.00	52.85	.16	.13	.13	3.72	10.64	3.85	10.77	.00	3.85		
90144	.03	.00	.00	53.32	.15	.14	.14	3.80	10.81	3.94	10.95	.00	3.94		
90145	.15	.00	.00	53.63	.15	.14	.14	3.92	10.99	4.06	11.13	.00	4.06		
90146	.01	.00	.00	53.94	.14	.15	.15	3.98	11.16	4.13	11.31	.00	4.13		
90148	.02	.00	.00	54.40	.13	.15	.15	4.07	11.52	4.23	11.68	.00	4.23		
90149	.24	.00	.00	54.85	.14	.16	.16	4.25	11.71	4.41	11.86	.00	4.41		
90150	.55	.00	.06	55.14	.19	.16	.16	4.44	11.89	4.60	12.05	.00	4.60		
90151	.26	.00	.07	55.44	.19	.17	.17	4.62	12.07	4.79	12.24	.00	4.79		
90152	.01	.00	.00	55.72	.17	.17	.17	4.75	12.26	4.92	12.43	.00	4.92		
90158	.05	.00	.00	56.69	.14	.20	.20	5.01	13.40	5.21	13.61	.00	5.21		
90159	.01	.00	.00	57.63	.13	.21	.21	5.04	13.60	5.25	13.81	.00	5.25		
90160	.20	.00	.00	57.88	.13	.21	.21	5.20	13.79	5.42	14.01	.00	5.42		

90161	.01	.00	.00	58.13	.13	.22	.22	5.24	13.99	5.46	14.21	.00	5.46
90162	.01	.00	.00	58.38	.12	.22	.22	5.28	14.19	5.50	14.41	.00	5.50
90164	.02	.00	.00	58.74	.11	.23	.23	5.34	14.59	5.58	14.82	.00	5.58
90165	.15	.00	.00	59.09	.11	.24	.24	5.46	14.79	5.70	15.03	.00	5.70
90166	.29	.00	.00	59.32	.13	.24	.25	5.67	14.99	5.91	15.23	.00	5.91
90167	.28	.00	.00	59.54	.15	.25	.25	5.79	15.19	6.04	15.44	.00	6.04
90169	.02	.00	.00	59.86	.14	.26	.26	5.92	15.60	6.18	15.86	.00	6.18
90176	.13	.00	.00	60.76	.11	.29	.30	6.19	17.05	6.48	17.35	.00	6.48
90178	.01	.00	.00	61.56	.10	.31	.31	6.21	17.47	6.52	17.79	.00	6.52
90179	.02	.00	.00	61.81	.10	.33	.32	6.21	17.69	6.54	18.00	.00	6.54
90183	.18	.00	.00	62.18	.10	.33	.34	6.36	18.53	6.69	18.87	.00	6.69
90184	.01	.00	.00	62.52	.10	.34	.34	6.39	18.75	6.72	19.09	.00	6.72
90188	.05	.00	.00	62.82	.10	.35	.37	6.43	19.60	6.77	19.97	.00	6.77
90193	.01	.00	.00	63.26	.10	.37	.39	6.43	20.67	6.79	21.06	.00	6.79
90201	.01	.00	.00	63.69	.10	.38	.44	6.43	22.37	6.80	22.81	.00	6.80
90205	.02	.00	.00	63.87	.10	.38	.46	6.44	23.22	6.82	23.68	.00	6.82
90207	.28	.00	.00	63.87	.11	.39	.47	6.65	23.64	7.04	24.11	.00	7.04
90208	.01	.00	.00	63.85	.11	.39	.48	6.67	23.85	7.06	24.32	.00	7.06
90209	.01	.00	.00	63.83	.11	.39	.48	6.70	24.05	7.09	24.54	.00	7.09
90211	.02	.00	.00	63.79	.10	.39	.49	6.72	24.47	7.12	24.96	.00	7.12
90212	.55	.00	.00	63.73	.16	.40	.50	6.93	24.67	7.33	25.17	.00	7.33
90223	.45	.00	.00	63.33	.14	.46	.56	7.31	26.87	7.77	27.43	.00	7.77
90229	.08	.00	.00	62.46	.15	.49	.59	7.50	28.02	7.99	28.60	.00	7.99
90230	.35	.00	.00	61.97	.17	.49	.59	7.69	28.20	8.18	28.79	.00	8.18
90231	.24	.00	.00	61.82	.19	.50	.60	7.80	28.39	8.30	28.98	.00	8.30
90232	.11	.00	.00	61.66	.18	.50	.60	7.92	28.57	8.42	29.17	.00	8.42
90233	.03	.00	.00	61.50	.17	.51	.61	8.01	28.75	8.51	29.36	.00	8.51
90234	.07	.00	.00	61.33	.17	.51	.61	8.06	28.93	8.57	29.54	.00	8.57
90235	.12	.00	.00	61.15	.18	.52	.61	8.16	29.11	8.68	29.73	.00	8.68
90236	.02	.00	.00	60.97	.17	.52	.62	8.23	29.29	8.75	29.91	.00	8.75
90237	.35	.00	.04	60.79	.19	.52	.62	8.41	29.47	8.93	30.09	.00	8.93
90238	.11	.00	.00	60.59	.18	.53	.63	8.55	29.64	9.08	30.27	.00	9.08
90239	.06	.00	.00	60.40	.17	.53	.63	8.66	29.81	9.20	30.45	.00	9.20
90243	.01	.00	.00	59.88	.15	.55	.65	8.86	30.49	9.41	31.14	.00	9.41
90246	.01	.00	.00	59.11	.13	.56	.66	8.95	30.98	9.51	31.65	.00	9.51
90247	.07	.00	.00	58.64	.13	.57	.67	9.00	31.14	9.57	31.81	.00	9.57
90248	.09	.00	.00	58.40	.13	.57	.67	9.07	31.30	9.65	31.97	.00	9.65
90251	.20	.00	.00	57.90	.12	.59	.68	9.28	31.77	9.86	32.45	.00	9.86
90253	.08	.00	.00	57.26	.12	.59	.69	9.37	32.07	9.96	32.76	.00	9.96
90269	.01	.00	.00	54.69	.10	.62	.75	9.49	34.23	10.11	34.98	.00	10.11
90270	.04	.00	.00	52.07	.10	.62	.75	9.52	34.35	10.14	35.10	.00	10.14
90275	.05	.00	.00	51.08	.10	.63	.75	9.56	34.92	10.19	35.67	.00	10.19
90276	.02	.00	.00	50.08	.10	.63	.75	9.58	35.03	10.21	35.78	.00	10.21
90277	.02	.00	.00	49.74	.10	.63	.75	9.60	35.14	10.22	35.89	.00	10.22
90278	.03	.00	.00	49.39	.10	.63	.75	9.62	35.24	10.25	35.99	.00	10.25
90279	.01	.00	.00	49.05	.10	.63	.75	9.64	35.35	10.27	36.10	.00	10.27
90289	.12	.00	.00	47.12	.10	.64	.75	9.73	36.29	10.37	37.04	.00	10.37
90292	.03	.00	.00	44.80	.10	.64	.75	9.78	36.54	10.41	37.30	.00	10.41
90305	.02	.00	.00	41.91	.10	.64	.75	9.80	37.48	10.45	38.23	.00	10.45
90308	.07	.00	.00	39.03	.10	.65	.75	9.86	37.67	10.51	38.42	.00	10.51
90309	.24	.00	.00	38.32	.13	.65	.75	9.92	37.73	10.57	38.48	.00	10.57
90310	.02	.00	.00	37.97	.13	.65	.75	9.94	37.78	10.58	38.53	.00	10.58
90318	.25	.00	.00	36.40	.13	.65	.75	10.07	38.20	10.71	38.96	.00	10.71
90319	.03	.00	.00	34.86	.15	.65	.75	10.09	38.25	10.74	39.00	.00	10.74
90324	.12	.00	.00	33.87	.15	.65	.75	10.19	38.48	10.84	39.23	.00	10.84

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	=	13.380 IN
PRECIP., NET	=	13.380 IN
PREDICTED RUNOFF	=	.506 IN
DEEP PERCOLATION	=	1.693 IN
ACTUAL PLANT EVAP	=	.646 IN
ACTUAL SOIL EVAP	=	10.535 IN
TOTAL ET	=	11.181 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	11.181 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN

WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.01	.00	25.55	.11	.00	.00	.07	3.27	.07	3.27	.00	.07		
91084	.06	.00	.00	32.55	.11	.00	.00	.13	3.34	.13	3.34	.00	.13		
91085	.29	.06	.00	32.87	.14	.00	.00	.20	3.42	.20	3.42	.00	.20		
91086	.17	.03	.00	33.19	.15	.00	.00	.28	3.50	.28	3.50	.00	.28		
91087	.15	.02	.00	33.51	.16	.00	.00	.36	3.58	.36	3.58	.00	.36		
91088	.19	.04	.00	33.84	.17	.00	.00	.44	3.66	.44	3.66	.00	.44		
91089	.22	.04	.00	34.17	.18	.00	.00	.52	3.74	.52	3.74	.00	.52		
91090	.25	.06	.07	34.50	.19	.00	.00	.60	3.82	.61	3.82	.00	.61		
91091	.28	.07	.13	34.83	.19	.00	.00	.69	3.91	.69	3.91	.00	.69		
91092	.02	.00	.00	35.17	.19	.00	.00	.71	3.99	.71	3.99	.00	.71		
91093	.02	.00	.00	35.51	.19	.00	.00	.72	4.08	.73	4.08	.00	.73		
91094	.05	.00	.01	35.85	.19	.00	.00	.76	4.17	.77	4.17	.00	.77		
91096	.21	.04	.06	36.36	.19	.00	.00	.87	4.35	.87	4.36	.00	.87		
91100	.02	.00	.00	37.41	.19	.01	.01	.92	4.74	.93	4.75	.00	.93		
91102	.01	.00	.00	38.46	.18	.01	.01	.95	4.94	.96	4.95	.00	.96		
91105	.05	.00	.00	39.35	.18	.01	.01	1.01	5.26	1.03	5.28	.00	1.03		
91106	.05	.00	.00	40.07	.18	.02	.02	1.05	5.37	1.07	5.39	.00	1.07		
91107	.10	.00	.00	40.43	.18	.02	.02	1.13	5.48	1.15	5.50	.00	1.15		
91108	.03	.00	.00	40.79	.18	.02	.02	1.16	5.59	1.17	5.61	.00	1.17		
91109	.03	.00	.00	41.15	.18	.02	.02	1.18	5.71	1.20	5.73	.00	1.20		
91116	.01	.00	.00	42.59	.17	.04	.04	1.27	6.56	1.30	6.59	.00	1.30		
91119	.05	.00	.00	44.40	.17	.04	.04	1.33	6.95	1.37	6.99	.00	1.37		
91120	.09	.00	.00	45.12	.17	.05	.05	1.40	7.08	1.44	7.13	.00	1.44		
91121	.01	.00	.00	45.48	.17	.05	.05	1.42	7.22	1.47	7.27	.00	1.47		
91123	.02	.00	.00	46.02	.16	.06	.06	1.44	7.49	1.50	7.55	.00	1.50		
91128	.12	.00	.00	47.26	.16	.08	.08	1.58	8.22	1.66	8.29	.00	1.66		
91129	.22	.00	.00	48.32	.17	.08	.08	1.73	8.37	1.81	8.44	.00	1.81		
91130	.25	.00	.00	48.67	.18	.08	.08	1.88	8.52	1.97	8.60	.00	1.97		
91131	.37	.00	.18	49.02	.19	.09	.09	2.03	8.67	2.12	8.76	.00	2.12		
91132	.01	.00	.00	49.36	.19	.09	.09	2.06	8.82	2.15	8.92	.00	2.15		
91134	.21	.00	.00	49.87	.19	.10	.10	2.24	9.14	2.34	9.24	.00	2.34		
91137	.16	.00	.00	50.72	.19	.11	.11	2.40	9.62	2.52	9.74	.00	2.52		
91138	.55	.00	.39	51.39	.19	.12	.12	2.55	9.79	2.66	9.91	.00	2.66		
91139	.38	.00	.21	51.72	.19	.12	.12	2.71	9.95	2.84	10.08	.00	2.84		
91140	.02	.00	.00	52.04	.17	.13	.13	2.84	10.12	2.97	10.25	.00	2.97		
91141	.01	.00	.00	52.37	.16	.13	.13	2.93	10.29	3.07	10.43	.00	3.07		
91145	.25	.00	.00	53.16	.14	.15	.15	3.23	10.99	3.38	11.14	.00	3.38		
91147	.28	.00	.00	54.09	.15	.16	.16	3.40	11.34	3.56	11.51	.00	3.56		
91148	.01	.00	.00	54.55	.15	.17	.17	3.48	11.52	3.65	11.69	.00	3.65		
91149	.02	.00	.00	54.85	.14	.17	.17	3.55	11.71	3.72	11.88	.00	3.72		
91150	.12	.00	.00	55.14	.14	.18	.18	3.64	11.89	3.82	12.07	.00	3.82		
91151	.03	.00	.00	55.44	.14	.18	.18	3.72	12.07	3.90	12.26	.00	3.90		
91154	.03	.00	.00	56.01	.12	.20	.20	3.84	12.63	4.04	12.83	.00	4.04		
91155	.12	.00	.00	56.56	.12	.20	.20	3.94	12.82	4.14	13.03	.00	4.14		
91156	.57	.00	.00	56.84	.18	.21	.21	4.13	13.02	4.34	13.22	.00	4.34		
91157	.15	.00	.00	57.10	.18	.21	.21	4.31	13.21	4.53	13.42	.00	4.53		
91158	.12	.00	.00	57.37	.17	.22	.22	4.47	13.40	4.69	13.62	.00	4.69		
91159	.01	.00	.00	57.63	.15	.23	.23	4.57	13.60	4.80	13.82	.00	4.80		
91171	.91	.00	.16	59.17	.12	.27	.29	5.05	16.01	5.33	16.30	.00	5.33		
91173	.03	.00	.00	60.67	.16	.29	.30	5.27	16.43	5.55	16.73	.00	5.55		
91174	.02	.00	.00	60.95	.15	.29	.31	5.33	16.64	5.62	16.95	.00	5.62		
91175	.02	.00	.00	61.14	.14	.30	.32	5.38	16.84	5.68	17.16	.00	5.68		
91176	.03	.00	.00	61.31	.14	.30	.32	5.45	17.05	5.75	17.38	.00	5.75		
91177	.01	.00	.00	61.48	.13	.31	.33	5.48	17.26	5.79	17.59	.00	5.79		
91179	.11	.00	.00	61.73	.13	.32	.34	5.60	17.69	5.92	18.03	.00	5.92		
91181	.05	.00	.00	62.03	.12	.33	.35	5.66	18.11	6.00	18.46	.00	6.00		
91182	.02	.00	.00	62.25	.12	.34	.36	5.71	18.32	6.05	18.68	.00	6.05		
91191	.10	.00	.00	62.86	.10	.37	.41	5.87	20.24	6.24	20.65	.00	6.24		
91195	.03	.00	.00	63.46	.10	.39	.43	5.90	21.10	6.28	21.53	.00	6.28		
91206	.22	.00	.00	63.80	.10	.40	.50	6.07	23.43	6.47	23.93	.00	6.47		
91207	.12	.00	.00	63.87	.11	.40	.51	6.17	23.64	6.57	24.14	.00	6.57		
91213	.29	.00	.00	63.78	.10	.42	.54	6.41	24.88	6.84	25.42	.00	6.84		
91214	.02	.00	.00	63.63	.11	.43	.55	6.43	25.08	6.86	25.63	.00	6.86		
91218	.06	.00	.00	63.47	.11	.44	.57	6.52	25.89	6.96	26.45	.00	6.96		
91235	.09	.00	.00	62.33	.10	.45	.66	6.62	29.11	7.07	29.77	.00	7.07		

91239	.28	.00	.00	60.69	.10	.46	.68	6.80	29.81	7.27	30.49	.00	7.27
91240	.61	.00	.00	60.20	.19	.47	.68	6.97	29.99	7.44	30.67	.00	7.44
91251	.24	.00	.00	58.86	.16	.52	.73	7.35	31.77	7.87	32.50	.00	7.87
91252	.03	.00	.00	57.39	.16	.52	.74	7.37	31.92	7.89	32.65	.00	7.89
91254	.84	.00	.48	56.99	.17	.53	.74	7.54	32.22	8.07	32.96	.00	8.07
91256	.01	.00	.00	56.45	.16	.54	.75	7.75	32.51	8.29	33.26	.00	8.29
91257	.19	.00	.00	56.03	.17	.54	.76	7.86	32.65	8.40	33.41	.00	8.40
91272	.11	.00	.00	53.63	.12	.59	.80	8.31	34.58	8.90	35.39	.00	8.90
91277	.10	.00	.00	50.41	.10	.59	.80	8.41	35.14	9.00	35.94	.00	9.00
91290	.06	.00	.00	47.29	.10	.60	.80	8.47	36.38	9.07	37.18	.00	9.07
91291	.01	.00	.00	44.80	.10	.62	.80	8.47	36.46	9.09	37.26	.00	9.09
91295	.12	.00	.00	43.89	.10	.62	.80	8.55	36.78	9.17	37.59	.00	9.17
91298	.01	.00	.00	42.63	.10	.62	.80	8.59	37.01	9.22	37.81	.00	9.22
91299	.18	.00	.00	41.90	.12	.62	.80	8.67	37.08	9.29	37.88	.00	9.29
91300	.28	.00	.00	41.54	.15	.62	.80	8.74	37.15	9.36	37.95	.00	9.36
91301	.06	.00	.00	41.18	.16	.62	.80	8.79	37.22	9.41	38.02	.00	9.41
91302	.01	.00	.00	40.82	.15	.62	.80	8.82	37.29	9.44	38.09	.00	9.44
91304	.24	.00	.00	40.28	.16	.62	.80	8.90	37.42	9.52	38.22	.00	9.52
91305	.12	.00	.00	39.74	.19	.62	.80	8.97	37.48	9.59	38.29	.00	9.59
91309	.18	.00	.00	38.85	.18	.62	.80	9.13	37.73	9.75	38.53	.00	9.75
91310	.14	.00	.08	37.97	.19	.62	.80	9.19	37.78	9.81	38.59	.00	9.81
91313	.09	.00	.00	37.26	.18	.62	.80	9.34	37.95	9.96	38.75	.00	9.96
91316	.04	.00	.00	36.22	.17	.62	.80	9.48	38.11	10.10	38.91	.00	10.10
91317	.06	.00	.00	35.54	.16	.62	.80	9.53	38.16	10.15	38.96	.00	10.15
91322	.07	.00	.00	34.53	.15	.62	.80	9.68	38.39	10.30	39.19	.00	10.30
91323	.04	.00	.00	33.54	.15	.62	.80	9.71	38.43	10.34	39.24	.00	10.34
91324	.12	.00	.00	33.22	.16	.62	.80	9.76	38.48	10.38	39.28	.00	10.38
91325	.09	.00	.00	32.90	.17	.62	.80	9.80	38.52	10.42	39.32	.00	10.42
91326	.01	.00	.00	32.58	.17	.62	.80	9.84	38.56	10.46	39.37	.00	10.46

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	.370 IN
DEEP PERCOLATION	=	1.774 IN
ACTUAL PLANT EVAP	=	.621 IN
ACTUAL SOIL EVAP	=	10.245 IN
TOTAL ET	=	10.866 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	10.866 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	.662
DEEP PERCOLATION	=	1.685
TOTAL ET	=	10.589
IRRIGATION APPLIED	=	.000
AVG. AVAL. STORAGE	=	1.589 IN
FINAL AVAL. STORAGE	=	1.800 IN

FINAL STORAGE FOR EACH FRACTION

.000	.000	.000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

ROCKER CONTROL SIMULATION

1989-1991

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.440	.000	.839	.000
FEB	.000	.000	.000	.019	.000	.600	.000
MAR	1.245	1.245	.206	.506	.000	.658	.000
APR	3.735	3.735	.903	2.099	1.215	.854	.000
MAY	1.480	1.480	.000	1.250	.000	.647	.000
JUN	.920	.920	.000	1.201	.000	.682	.000
JUL	1.070	1.070	.000	.915	.000	.632	.000
AUG	2.180	2.180	.000	1.719	.374	.767	.000
SEP	.300	.300	.000	.542	.000	.632	.000
OCT	.860	.860	.000	.755	.000	.651	.000
NOV	.170	.170	.000	.275	.000	.621	.000
DEC	.000	.000	.000	.000	.000	.600	.000
TOT	11.960	11.960	1.109	9.721	1.589	.682	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	.600	.000
FEB	.000	.000	.000	.000	.000	.600	.000
MAR	1.115	1.115	.151	.559	.000	.637	.000
APR	2.875	2.875	.355	1.530	1.069	1.082	.000
MAY	3.500	3.500	.000	2.703	.583	.872	.000
JUN	1.210	1.210	.000	1.750	.000	.740	.000
JUL	1.150	1.150	.000	.787	.000	.620	.000
AUG	2.000	2.000	.000	2.079	.041	.926	.000
SEP	.500	.500	.000	.743	.000	.664	.000
OCT	.280	.280	.000	.280	.000	.605	.000
NOV	.750	.750	.000	.544	.000	.809	.000
DEC	.000	.000	.000	.206	.000	.657	.000
TOT	13.380	13.380	.506	11.181	1.693	.734	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	.600	.000
FEB	.000	.000	.000	.000	.000	.600	.000
MAR	1.475	1.475	.258	.606	.071	.678	.000
APR	1.025	1.025	.113	.839	.207	1.078	.000
MAY	3.040	3.040	.000	2.456	.776	.984	.000
JUN	2.180	2.180	.000	2.096	.158	.804	.000
JUL	.490	.490	.000	.631	.000	.616	.000
AUG	1.350	1.350	.000	.909	.000	.678	.000
SEP	1.420	1.420	.000	1.380	.477	.819	.000
OCT	1.070	1.070	.000	.606	.000	.664	.000
NOV	.960	.960	.000	1.142	.085	.976	.000
DEC	.000	.000	.000	.201	.000	.635	.000
TOT	13.010	13.010	.370	10.866	1.774	.761	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.147	.000	.680	.000
FEB	.000	.000	.000	.006	.000	.600	.000
MAR	1.278	1.278	.205	.557	.024	.658	.000
APR	2.545	2.545	.457	1.490	.830	1.005	.000
MAY	2.673	2.673	.000	2.136	.453	.834	.000
JUN	1.437	1.437	.000	1.682	.053	.742	.000
JUL	.903	.903	.000	.778	.000	.623	.000
AUG	1.843	1.843	.000	1.569	.138	.790	.000
SEP	.740	.740	.000	.888	.159	.705	.000
OCT	.737	.737	.000	.547	.000	.640	.000
NOV	.627	.627	.000	.654	.028	.802	.000
DEC	.000	.000	.000	.136	.000	.631	.000
TOT	12.783	12.783	.662	10.589	1.685	.726	.000

****
SNOW NOTICE
****
DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf06ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

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CARD   1:SILVER BOW CREEK RI/FS
CARD   2:ROCKER CONTROL PLOT
CARD   3:1989-1991
CARD   4:       89      91       2       1       0
CARD   5:     .050    .100    .850 100.0002000.000
CARD   6:        2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:        1   1.000    .060
CARD  14:        3
CARD  15:        1       0       0       0       0       0       0       0       0       0

CARD  15:        1       0       0       0       0       0       0       0       0       0

CARD  15:        1       0       0       0       0       0       0       0       0       0

CARD  16:        1   1.000
CARD  17:    1.000
CARD  18:    1.000
CARD  19:     .015
CARD  17:    1.000
CARD  18:    1.000
CARD  19:     .015
CARD  17:    1.000
CARD  18:    1.000
CARD  19:     .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
ROCKER CONTROL PLOT
1989-1991

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.01
2	.010	2.65	.01
3	.030	1.80	.09
4	.300	1.60	.23
5	.200	2.65	.66

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600 ACRES
SLOPE LENGTH	1450.00 FT
AVERAGE SLOPE	.0199

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.060

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .21 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .18 TONS/ACRE
ENRICHMENT RATIO 1.120

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED .90 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.12 TONS/ACRE
ENRICHMENT RATIO 1.017

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
13 STORMS PRODUCED 1.11 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 1.30 TONS/ACRE
ENRICHMENT RATIO 1.031

MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
5 STORMS PRODUCED .15 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .13 TONS/ACRE
ENRICHMENT RATIO 1.129

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
4 STORMS PRODUCED .35 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .38 TONS/ACRE
ENRICHMENT RATIO 1.058

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
9 STORMS PRODUCED .51 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .50 TONS/ACRE
ENRICHMENT RATIO 1.076

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .26 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .22 TONS/ACRE
ENRICHMENT RATIO 1.116

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .11 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .11 TONS/ACRE
ENRICHMENT RATIO 1.088

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1991
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11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991
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0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991
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94 STORMS PRODUCED 13.01 IN. OF RAINFALL
9 STORMS PRODUCED .37 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .33 TONS/ACRE
ENRICHMENT RATIO 1.107

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
ROCKER CONTROL PLOT
1989-1991

STORM SUMMARY
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314 STORMS PRODUCED 38.35 IN. OF RAINFALL
31 STORMS PRODUCED 1.99 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.01	1343.	.0081	.0001	130.
2	.01	1033.	.0062	.0001	100.
3	.09	9298.	.0562	.0009	901.
4	.24	23489.	.1420	.0023	2275.
5	.64	62757.	.3793	.0061	6078.
TOTAL		97920.	.5918	.0095	9484.

TOTAL SOIL LOSS FOR AREA 2.13 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES

AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.053
SILT	.105
SAND	.842
ORGANIC MATTER	.001

INDEX OF SPECIFIC SURFACE 6.94 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.053

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
1 STORMS PRODUCED .06 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .28 TONS/ACRE
ENRICHMENT RATIO 1.116

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
1 STORMS PRODUCED .20 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.25 TONS/ACRE
ENRICHMENT RATIO 1.049

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR NOV, 1991

11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991

94 STORMS PRODUCED 13.01 IN. OF RAINFALL
16 STORMS PRODUCED 1.37 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 6.81 TONS/ACRE
ENRICHMENT RATIO 1.048

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
OPPORTUNITY CONTROL PLOT
1989-1991

STORM SUMMARY

314 STORMS PRODUCED 38.35 IN. OF RAINFALL
48 STORMS PRODUCED 5.08 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.04	51676.	.1221	.0020	1957.
2	.07	90994.	.2151	.0034	3447.
3	.24	298336.	.7052	.0113	11301.
4	.42	527598.	1.2471	.0200	19985.
5	.24	298845.	.7064	.0113	11320.
TOTAL		1267449.	2.9958	.0480	48010.

TOTAL SOIL LOSS FOR AREA 27.60 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES
AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.153
SILT	.305
SAND	.541
ORGANIC MATTER	.010

INDEX OF SPECIFIC SURFACE 28.25 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.022

ROCKER
GLEAMS HYDROLOGY/EROSION
OUTPUT

RF07

YDROLOGY INPUT PARAMETER FILENAME: rf07.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
ROCKER DEEP-TILL SIMULATION
1989-1991

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	70	.00
0	1	99	2.00
0	1	129	2.80
0	1	277	2.80
0	1	306	1.80
0	1	336	.90
0	1	366	.00
0	2	70	.00
0	2	99	2.00
0	2	129	2.80
0	2	277	2.80
0	2	306	1.80
0	2	336	.90
0	2	366	.00
0	3	70	.00
0	3	99	2.00
0	3	129	2.80
0	3	277	2.80
0	3	306	1.80
0	3	336	.90
0	3	366	.00

FIELD AREA	=	22.960 ACRES
ROOTING DEPTH	=	36.000 IN
SATURATED CONDUCTIVITY	=	.500 IN/HR
AVG. FUL	=	.267
AVG. FIELD CAPACITY	=	.180 IN/IN
INITIAL STORAGE FRACTION	=	.850
EVAPORATION COEFFICIENT	=	3.300
AVERAGE POROSITY	=	.400 CC/CC
SCS CURVE NUMBER	=	40.000
CHANNEL SLOPE	=	.015 FT/FT
WATERSHED LEN/WIDTH RATIO	=	2.000
PEAK FLOW RATE COEFFICIENT	=	34.276
PEAK FLOW RATE EXPONENT	=	.868
UPPER LIMIT OF STORAGE	=	10.800 IN
AVG. 15-BAR WATER CONTENT	=	.100 IN/IN
INITIAL SOIL WATER STORAGE	=	2.448 IN
FRAC. P.A.W. TO BEGIN IRR.	=	.000
FRAC. P.A.W. TO END IRR.	=	.000

UPPER LIMIT OF STORAGES, IN

.118	1.180	1.180	1.180	1.180	1.180	1.800	1.800

INITIAL PLANT AVAILABLE STORAGE, IN

.030	.301	.301	.301	.301	.301	.301	.306	.306

POROSITY BY LAYER (CC/CC)

.400	.400	.400	.400	.400	.400	.400	.400	.400

FUL BY LAYER (IN/IN)

.300	.300	.300	.300	.300	.300	.300	.200	.200

FEILD CAPACITY BY LAYER (IN/IN)

.190	.190	.190	.190	.190	.190	.190	.160	.160

FIELD CAPACITY BY LAYER (IN)

.075	.748	.748	.748	.748	.748	.748	.960	.960

15-BAR WATER CONTENT BY LAYER (IN/IN)

.100	.100	.100	.100	.100	.100	.100	.100	.100

WATER CONTENT AT WILT. PT. BY LAYER (IN)

.039	.393	.393	.393	.393	.393	.393	.600	.600

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.15	.16	.16	1.16	1.82	1.31	1.97	.00	1.31		
89084	.05	.00	.00	32.55	.13	.19	.19	1.20	1.86	1.38	2.04	.00	1.38		
89085	.17	.02	.00	32.87	.13	.21	.21	1.24	1.90	1.45	2.11	.00	1.45		
89086	.12	.01	.00	33.19	.13	.25	.25	1.28	1.94	1.53	2.19	.00	1.53		
89087	.20	.03	.00	33.51	.14	.28	.28	1.33	1.99	1.61	2.27	.00	1.61		
89088	.19	.03	.00	33.84	.14	.32	.32	1.37	2.03	1.69	2.35	.00	1.69		
89089	.23	.04	.00	34.17	.14	.36	.36	1.42	2.09	1.78	2.44	.00	1.78		
89090	.26	.05	.00	34.50	.15	.40	.40	1.47	2.14	1.87	2.54	.00	1.87		
89091	.28	.06	.00	34.83	.15	.45	.45	1.51	2.19	1.96	2.64	.00	1.96		
89092	.37	.10	.00	35.17	.15	.49	.49	1.56	2.24	2.05	2.74	.00	2.05		
89093	.36	.10	.00	35.51	.16	.55	.55	1.61	2.30	2.15	2.84	.00	2.15		
89094	.38	.12	.00	35.85	.16	.60	.60	1.65	2.35	2.25	2.95	.00	2.25		
89095	.42	.14	.00	36.19	.17	.66	.66	1.69	2.40	2.35	3.06	.00	2.35		
89096	.45	.16	.00	36.54	.17	.72	.72	1.74	2.45	2.46	3.17	.00	2.46		
89097	.49	.18	.00	36.88	.18	.79	.79	1.77	2.50	2.56	3.28	.00	2.56		
89098	.05	.00	.00	37.23	.18	.85	.85	1.81	2.55	2.67	3.40	.00	2.67		
89099	.05	.00	.00	37.58	.18	.93	.93	1.85	2.60	2.78	3.52	.00	2.78		
89100	.01	.00	.00	37.93	.17	1.00	1.00	1.88	2.64	2.89	3.65	.00	2.89		
89106	.05	.00	.00	39.17	.16	1.49	1.49	2.09	2.94	3.59	4.44	.00	3.59		
89107	.15	.00	.00	40.43	.16	1.59	1.59	2.12	3.00	3.71	4.58	.00	3.71		
89111	.01	.00	.00	41.33	.15	1.97	1.97	2.25	3.20	4.22	5.18	.00	4.22		
89112	.10	.00	.00	42.23	.14	2.08	2.08	2.27	3.25	4.35	5.33	.00	4.35		
89113	.18	.00	.00	42.59	.14	2.18	2.18	2.30	3.30	4.49	5.49	.00	4.49		
89114	.13	.00	.00	42.96	.14	2.29	2.29	2.33	3.36	4.62	5.65	.00	4.62		
89115	.03	.00	.00	43.32	.14	2.41	2.41	2.36	3.41	4.76	5.82	.00	4.76		
89117	.19	.00	.00	43.86	.14	2.64	2.64	2.41	3.52	5.05	6.15	.00	5.05		
89118	.02	.00	.00	44.40	.13	2.76	2.76	2.43	3.57	5.19	6.33	.00	5.19		
89119	.01	.00	.00	44.76	.13	2.88	2.88	2.45	3.62	5.34	6.50	.00	5.34		
89122	.02	.00	.00	45.48	.12	3.27	3.27	2.52	3.78	5.79	7.05	.00	5.79		
89127	.02	.00	.00	46.91	.11	3.65	3.97	2.62	4.06	6.27	8.02	.00	6.27		
89128	.06	.00	.00	47.97	.10	3.70	4.11	2.63	4.12	6.33	8.23	.00	6.33		
89129	.02	.00	.00	48.32	.10	3.73	4.26	2.65	4.17	6.39	8.43	.00	6.39		
89130	.01	.00	.00	48.67	.10	3.76	4.41	2.67	4.23	6.43	8.66	.00	6.43		
89131	.15	.00	.00	49.02	.10	3.81	4.56	2.69	4.29	6.50	8.85	.00	6.50		
89132	.01	.00	.00	49.36	.10	3.85	4.71	2.71	4.35	6.56	9.06	.00	6.56		
89133	.10	.00	.00	49.70	.10	3.89	4.86	2.73	4.41	6.63	9.27	.00	6.63		
89134	.01	.00	.00	50.04	.10	3.93	5.02	2.75	4.47	6.68	9.49	.00	6.68		
89135	.13	.00	.00	50.38	.10	3.98	5.18	2.77	4.53	6.75	9.71	.00	6.75		
89136	.01	.00	.00	50.72	.10	4.02	5.33	2.79	4.59	6.81	9.93	.00	6.81		
89138	.17	.00	.00	51.22	.10	4.10	5.66	2.84	4.72	6.94	10.38	.00	6.94		
89139	.01	.00	.00	51.72	.10	4.14	5.82	2.86	4.78	7.00	10.60	.00	7.00		
89143	.01	.00	.00	52.53	.10	4.20	6.49	2.92	5.04	7.12	11.54	.00	7.12		
89144	.04	.00	.00	53.32	.10	4.21	6.66	2.95	5.11	7.15	11.77	.00	7.15		
89145	.01	.00	.00	53.63	.10	4.22	6.84	2.95	5.18	7.17	12.01	.00	7.17		
89148	.50	.00	.00	54.25	.10	4.35	7.36	2.97	5.39	7.32	12.75	.00	7.32		

89149	.20	.00	.00	54.85	.11	4.48	7.54	2.99	5.46	7.48	13.00	.00	7.48
89153	.01	.00	.00	55.58	.10	4.73	8.27	3.09	5.74	7.81	14.01	.00	7.81
89154	.02	.00	.00	56.29	.10	4.75	8.45	3.11	5.81	7.86	14.27	.00	7.86
89161	.17	.00	.00	57.36	.10	4.81	9.79	3.16	6.33	7.97	16.12	.00	7.97
89166	.25	.00	.00	58.85	.10	4.93	10.77	3.24	6.72	8.16	17.49	.00	8.16
89167	.31	.00	.00	59.54	.11	5.06	10.97	3.26	6.79	8.32	17.76	.00	8.32
89168	.01	.00	.00	59.76	.11	5.15	11.17	3.29	6.87	8.43	18.04	.00	8.43
89171	.09	.00	.00	60.17	.10	5.28	11.77	3.37	7.11	8.65	18.88	.00	8.65
89175	.03	.00	.00	60.86	.10	5.36	12.59	3.39	7.43	8.76	20.02	.00	8.76
89178	.03	.00	.00	61.48	.10	5.39	13.21	3.39	7.67	8.79	20.88	.00	8.79
89193	.03	.00	.00	62.71	.10	5.42	16.35	3.39	8.90	8.82	25.25	.00	8.82
89194	.12	.00	.00	63.50	.10	5.46	16.56	3.42	8.98	8.88	25.54	.00	8.88
89197	.06	.00	.00	63.62	.10	5.50	17.19	3.48	9.23	8.98	26.42	.00	8.98
89198	.09	.00	.00	63.73	.10	5.53	17.40	3.51	9.31	9.04	26.71	.00	9.04
89203	.12	.00	.00	63.82	.10	5.60	18.44	3.55	9.71	9.15	28.16	.00	9.15
89204	.02	.00	.00	63.88	.10	5.62	18.65	3.56	9.79	9.19	28.45	.00	9.19
89205	.12	.00	.00	63.88	.10	5.67	18.86	3.59	9.88	9.26	28.73	.00	9.26
89208	.35	.00	.00	63.87	.10	5.81	19.47	3.65	10.12	9.46	29.59	.00	9.46
89209	.07	.00	.00	63.83	.11	5.90	19.68	3.68	10.20	9.58	29.87	.00	9.58
89211	.07	.00	.00	63.79	.10	6.01	20.08	3.73	10.35	9.74	30.44	.00	9.74
89212	.02	.00	.00	63.73	.10	6.04	20.29	3.76	10.43	9.80	30.72	.00	9.80
89213	.10	.00	.00	63.68	.10	6.09	20.47	3.78	10.51	9.87	31.00	.00	9.87
89220	.08	.00	.00	63.42	.10	6.15	21.87	3.86	11.05	10.01	32.92	.00	10.01
89221	.12	.00	.00	63.09	.10	6.19	22.07	3.88	11.13	10.07	33.19	.00	10.07
89223	.20	.00	.00	62.94	.10	6.28	22.45	3.93	11.28	10.21	33.73	.00	10.21
89224	.03	.00	.00	62.77	.10	6.32	22.64	3.96	11.35	10.28	33.99	.00	10.28
89225	.03	.00	.00	62.65	.10	6.36	22.83	3.98	11.43	10.34	34.26	.00	10.34
89230	.02	.00	.00	62.26	.10	6.41	23.76	4.03	11.79	10.44	35.55	.00	10.44
89231	.01	.00	.00	61.82	.10	6.42	23.94	4.03	11.86	10.45	35.80	.00	10.45
89232	.05	.00	.00	61.66	.10	6.43	24.12	4.05	11.93	10.49	36.05	.00	10.49
89233	.02	.00	.00	61.50	.10	6.44	24.30	4.07	12.00	10.52	36.30	.00	10.52
89235	.80	.00	.00	61.24	.11	6.62	24.65	4.10	12.14	10.72	36.79	.00	10.72
89236	.45	.00	.00	60.97	.12	6.80	24.83	4.12	12.21	10.92	37.03	.00	10.92
89237	.06	.00	.00	60.79	.12	6.97	25.00	4.14	12.27	11.11	37.27	.00	11.11
89238	.01	.00	.00	60.59	.11	7.14	25.17	4.17	12.34	11.31	37.51	.00	11.31
89239	.08	.00	.00	60.40	.11	7.29	25.34	4.19	12.41	11.47	37.75	.00	11.47
89240	.02	.00	.00	60.20	.11	7.39	25.51	4.21	12.47	11.60	37.98	.00	11.60
89241	.01	.00	.00	59.99	.11	7.47	25.68	4.23	12.54	11.71	38.22	.00	11.71
89242	.01	.00	.00	59.78	.10	7.53	25.84	4.25	12.60	11.79	38.45	.00	11.79
89243	.08	.00	.00	59.56	.10	7.59	26.01	4.27	12.67	11.87	38.68	.00	11.87
89245	.01	.00	.00	59.22	.10	7.66	26.33	4.32	12.79	11.97	39.12	.00	11.97
89252	.03	.00	.00	58.15	.10	7.70	27.41	4.38	13.22	12.07	40.63	.00	12.07
89253	.02	.00	.00	57.13	.10	7.70	27.56	4.40	13.27	12.10	40.83	.00	12.10
89260	.12	.00	.00	56.03	.10	7.73	28.54	4.41	13.66	12.14	42.20	.00	12.14
89262	.12	.00	.00	54.73	.10	7.77	28.81	4.45	13.76	12.22	42.57	.00	12.22
89274	.22	.00	.00	52.54	.10	7.82	29.80	4.53	14.33	12.35	44.12	.00	12.35
89275	.10	.00	.00	50.42	.11	7.82	29.80	4.54	14.37	12.37	44.17	.00	12.37
89276	.01	.00	.00	50.08	.11	7.82	29.80	4.56	14.41	12.38	44.21	.00	12.38
89277	.10	.00	.00	49.74	.11	7.82	29.80	4.57	14.45	12.40	44.25	.00	12.40
89279	.05	.00	.00	49.22	.11	7.82	29.80	4.60	14.53	12.43	44.33	.00	12.43
89284	.02	.00	.00	48.00	.11	7.82	29.80	4.70	14.74	12.52	44.53	.00	12.52
89285	.02	.00	.00	46.95	.11	7.82	29.80	4.72	14.78	12.54	44.57	.00	12.54
89297	.02	.00	.00	44.61	.11	7.82	29.80	4.91	15.24	12.73	45.04	.00	12.73
89298	.06	.00	.00	42.27	.10	7.82	29.80	4.94	15.28	12.76	45.08	.00	12.76
89299	.01	.00	.00	41.90	.10	7.82	29.80	4.96	15.32	12.79	45.12	.00	12.79
89300	.02	.00	.00	41.54	.10	7.82	29.80	4.98	15.36	12.80	45.15	.00	12.80
89301	.06	.00	.00	41.18	.11	7.82	29.80	5.01	15.39	12.83	45.19	.00	12.83
89304	.17	.00	.00	40.46	.11	7.82	29.80	5.07	15.50	12.89	45.30	.00	12.89
89307	.02	.00	.00	39.39	.11	7.82	29.80	5.13	15.61	12.96	45.41	.00	12.96
89308	.01	.00	.00	38.67	.11	7.82	29.80	5.16	15.65	12.98	45.44	.00	12.98
89309	.02	.00	.00	38.32	.11	7.82	29.80	5.17	15.68	13.00	45.48	.00	13.00
89311	.01	.00	.00	37.79	.11	7.82	29.80	5.21	15.75	13.04	45.55	.00	13.04
89312	.01	.00	.00	37.26	.11	7.82	29.80	5.24	15.79	13.06	45.58	.00	13.06
89317	.02	.00	.00	36.23	.10	7.82	29.80	5.31	15.95	13.13	45.75	.00	13.13
89318	.04	.00	.00	35.20	.10	7.82	29.80	5.34	15.98	13.17	45.78	.00	13.17
89319	.03	.00	.00	34.86	.10	7.82	29.80	5.37	16.02	13.19	45.81	.00	13.19
89321	.01	.00	.00	34.36	.10	7.82	29.80	5.40	16.07	13.23	45.86	.00	13.23

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	1.039 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	7.826 IN
ACTUAL SOIL EVAP	=	5.543 IN
TOTAL ET	=	13.369 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	13.369 IN
BEGIN SOIL WATER	=	2.448 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.10	.00	.00	.04	1.82	.04	1.82	.00	.04		
90084	.05	.00	.00	32.55	.10	.00	.00	.08	1.86	.08	1.86	.00	.08		
90085	.09	.00	.00	32.87	.10	.00	.00	.12	1.90	.12	1.90	.00	.12		
90086	.12	.01	.00	33.19	.10	.00	.00	.17	1.94	.17	1.94	.00	.17		
90087	.15	.02	.00	33.51	.11	.00	.00	.21	1.99	.21	1.99	.00	.21		
90088	.18	.03	.00	33.84	.11	.00	.00	.26	2.03	.26	2.03	.00	.26		
90089	.22	.04	.00	34.17	.11	.00	.00	.30	2.08	.30	2.08	.00	.30		
90090	.25	.05	.00	34.50	.12	.00	.01	.35	2.12	.35	2.13	.00	.35		
90091	.28	.06	.00	34.83	.12	.01	.01	.40	2.17	.40	2.18	.00	.40		
90092	.32	.08	.00	35.17	.13	.01	.02	.44	2.22	.46	2.23	.00	.46		
90093	.35	.10	.00	35.51	.13	.02	.02	.49	2.27	.51	2.29	.00	.51		
90094	.32	.09	.00	35.85	.14	.03	.03	.54	2.32	.57	2.35	.00	.57		
90102	.08	.00	.00	37.41	.13	.20	.20	.79	2.75	.99	2.95	.00	.99		
90104	.20	.00	.00	39.17	.13	.26	.26	.87	2.86	1.13	3.12	.00	1.13		
90105	.02	.00	.00	39.71	.13	.29	.29	.92	2.92	1.21	3.22	.00	1.21		
90108	.09	.00	.00	40.43	.13	.40	.40	1.04	3.11	1.44	3.50	.00	1.44		
90112	.14	.00	.00	41.69	.12	.56	.56	1.18	3.37	1.73	3.92	.00	1.73		
90113	.03	.00	.00	42.59	.12	.60	.60	1.23	3.44	1.83	4.04	.00	1.83		
90114	.77	.00	.00	42.96	.14	.64	.65	1.30	3.50	1.95	4.15	.00	1.95		
90115	.01	.00	.00	43.32	.13	.69	.69	1.37	3.57	2.06	4.26	.00	2.06		
90116	.02	.00	.00	43.68	.13	.74	.74	1.44	3.64	2.18	4.38	.00	2.18		
90117	.04	.00	.00	44.04	.13	.79	.79	1.51	3.71	2.30	4.51	.00	2.30		
90118	.06	.00	.00	44.40	.13	.84	.84	1.58	3.79	2.43	4.63	.00	2.43		
90119	.13	.00	.00	44.76	.13	.90	.90	1.66	3.86	2.55	4.76	.00	2.55		
90120	.01	.00	.00	45.12	.12	.95	.95	1.73	3.93	2.68	4.89	.00	2.68		
90122	.07	.00	.00	45.66	.12	1.07	1.07	1.88	4.09	2.95	5.16	.00	2.95		
90124	.02	.00	.00	46.38	.11	1.17	1.20	2.01	4.24	3.19	5.44	.00	3.19		
90127	.01	.00	.00	47.27	.11	1.27	1.39	2.12	4.48	3.40	5.87	.00	3.40		
90128	.03	.00	.00	47.97	.11	1.30	1.46	2.18	4.56	3.48	6.02	.00	3.48		
90129	.07	.00	.00	48.32	.10	1.32	1.53	2.23	4.65	3.56	6.18	.00	3.56		
90130	.01	.00	.00	48.67	.10	1.34	1.60	2.27	4.73	3.61	6.33	.00	3.61		
90131	.03	.00	.00	49.02	.10	1.36	1.67	2.29	4.82	3.65	6.49	.00	3.65		
90132	.01	.00	.00	49.36	.10	1.37	1.74	2.33	4.90	3.70	6.66	.00	3.70		
90133	.31	.00	.00	49.70	.11	1.41	1.81	2.42	4.99	3.82	6.80	.00	3.82		
90134	.13	.00	.00	50.04	.11	1.45	1.89	2.50	5.08	3.95	6.96	.00	3.95		
90135	.17	.00	.00	50.38	.11	1.49	1.96	2.59	5.17	4.08	7.12	.00	4.08		
90137	.21	.00	.00	50.89	.11	1.57	2.11	2.77	5.35	4.33	7.45	.00	4.33		
90138	.12	.00	.00	51.39	.11	1.61	2.18	2.86	5.44	4.47	7.62	.00	4.47		
90139	.03	.00	.00	51.72	.10	1.64	2.26	2.95	5.53	4.58	7.79	.00	4.58		
90140	.90	.00	.00	52.04	.12	1.71	2.34	3.04	5.62	4.75	7.96	.00	4.75		
90141	.01	.00	.00	52.37	.12	1.79	2.42	3.13	5.72	4.93	8.13	.00	4.93		
90143	.11	.00	.00	52.85	.12	1.95	2.57	3.29	5.91	5.24	8.48	.00	5.24		
90144	.03	.00	.00	53.32	.11	2.01	2.65	3.36	6.01	5.37	8.66	.00	5.37		
90145	.15	.00	.00	53.63	.11	2.08	2.74	3.46	6.10	5.53	8.84	.00	5.53		
90146	.01	.00	.00	53.94	.11	2.12	2.82	3.52	6.20	5.64	9.02	.00	5.64		
90148	.02	.00	.00	54.40	.10	2.18	2.98	3.68	6.40	5.86	9.38	.00	5.86		
90149	.24	.00	.00	54.85	.11	2.23	3.07	3.76	6.50	5.99	9.57	.00	5.99		
90150	.55	.00	.00	55.14	.12	2.31	3.15	3.86	6.60	6.17	9.75	.00	6.17		
90151	.26	.00	.00	55.44	.12	2.40	3.23	3.96	6.71	6.36	9.94	.00	6.36		
90152	.01	.00	.00	55.72	.11	2.48	3.32	4.07	6.81	6.54	10.13	.00	6.54		
90158	.05	.00	.00	56.69	.10	2.65	3.85	4.39	7.45	7.04	11.29	.00	7.04		
90159	.01	.00	.00	57.63	.10	2.66	3.94	4.43	7.55	7.09	11.49	.00	7.09		
90160	.20	.00	.00	57.88	.10	2.68	4.03	4.54	7.66	7.23	11.69	.00	7.23		

90161	.01	.00	.00	58.13	.10	2.70	4.12	4.59	7.77	7.29	11.89	.00	7.29
90162	.01	.00	.00	58.38	.10	2.73	4.21	4.59	7.88	7.32	12.09	.00	7.32
90164	.02	.00	.00	58.74	.10	2.75	4.39	4.59	8.10	7.34	12.49	.00	7.34
90165	.15	.00	.00	59.09	.10	2.77	4.48	4.70	8.22	7.47	12.70	.00	7.47
90166	.29	.00	.00	59.32	.11	2.81	4.58	4.77	8.33	7.58	12.90	.00	7.58
90167	.28	.00	.00	59.54	.11	2.87	4.67	4.88	8.44	7.75	13.11	.00	7.75
90169	.02	.00	.00	59.86	.10	2.93	4.86	5.06	8.67	8.00	13.52	.00	8.00
90176	.13	.00	.00	60.76	.10	3.03	5.53	5.17	9.47	8.20	15.00	.00	8.20
90178	.01	.00	.00	61.56	.10	3.05	5.72	5.17	9.71	8.22	15.43	.00	8.22
90179	.02	.00	.00	61.81	.10	3.07	5.82	5.17	9.83	8.24	15.64	.00	8.24
90183	.18	.00	.00	62.18	.10	3.10	6.21	5.29	10.30	8.38	16.50	.00	8.38
90184	.01	.00	.00	62.52	.10	3.10	6.31	5.32	10.42	8.42	16.72	.00	8.42
90188	.05	.00	.00	62.82	.10	3.12	6.70	5.36	10.89	8.48	17.59	.00	8.48
90193	.01	.00	.00	63.26	.10	3.13	7.19	5.36	11.48	8.49	18.67	.00	8.49
90201	.01	.00	.00	63.69	.10	3.14	7.97	5.36	12.43	8.50	20.40	.00	8.50
90205	.02	.00	.00	63.87	.10	3.14	8.36	5.38	12.90	8.52	21.26	.00	8.52
90207	.28	.00	.00	63.87	.10	3.18	8.55	5.49	13.13	8.67	21.69	.00	8.67
90208	.01	.00	.00	63.85	.10	3.20	8.65	5.52	13.25	8.72	21.90	.00	8.72
90209	.01	.00	.00	63.83	.10	3.21	8.75	5.54	13.36	8.76	22.11	.00	8.76
90211	.02	.00	.00	63.79	.10	3.23	8.94	5.57	13.59	8.80	22.53	.00	8.80
90212	.55	.00	.00	63.73	.11	3.31	9.03	5.69	13.71	8.99	22.74	.00	8.99
90223	.45	.00	.00	63.33	.10	3.52	10.04	5.99	14.93	9.52	24.97	.00	9.52
90229	.08	.00	.00	62.46	.10	3.64	10.57	6.27	15.56	9.91	26.13	.00	9.91
90230	.35	.00	.00	61.97	.11	3.69	10.65	6.36	15.67	10.05	26.32	.00	10.05
90231	.24	.00	.00	61.82	.11	3.74	10.74	6.46	15.77	10.20	26.51	.00	10.20
90232	.11	.00	.00	61.66	.11	3.79	10.82	6.56	15.87	10.35	26.70	.00	10.35
90233	.03	.00	.00	61.50	.10	3.83	10.91	6.66	15.97	10.49	26.88	.00	10.49
90234	.07	.00	.00	61.33	.10	3.85	10.99	6.76	16.07	10.62	27.06	.00	10.62
90235	.12	.00	.00	61.15	.10	3.88	11.07	6.86	16.17	10.74	27.25	.00	10.74
90236	.02	.00	.00	60.97	.10	3.89	11.16	6.94	16.27	10.83	27.43	.00	10.83
90237	.35	.00	.00	60.79	.11	3.93	11.24	7.04	16.37	10.97	27.61	.00	10.97
90238	.11	.00	.00	60.59	.11	3.97	11.32	7.14	16.47	11.11	27.78	.00	11.11
90239	.06	.00	.00	60.40	.10	4.00	11.40	7.24	16.56	11.24	27.96	.00	11.24
90243	.01	.00	.00	59.88	.10	4.07	11.71	7.32	16.94	11.39	28.65	.00	11.39
90246	.01	.00	.00	59.11	.10	4.08	11.93	7.32	17.21	11.40	29.15	.00	11.40
90247	.07	.00	.00	58.64	.10	4.08	12.01	7.38	17.30	11.46	29.31	.00	11.46
90248	.09	.00	.00	58.40	.10	4.09	12.08	7.45	17.39	11.54	29.47	.00	11.54
90251	.20	.00	.00	57.90	.10	4.13	12.29	7.54	17.65	11.66	29.94	.00	11.66
90253	.08	.00	.00	57.26	.10	4.15	12.43	7.64	17.82	11.79	30.25	.00	11.79
90269	.01	.00	.00	54.69	.10	4.18	13.43	7.67	19.02	11.85	32.44	.00	11.85
90270	.04	.00	.00	52.07	.10	4.18	13.48	7.70	19.08	11.88	32.56	.00	11.88
90275	.05	.00	.00	51.08	.10	4.19	13.48	7.74	19.40	11.93	32.88	.00	11.93
90276	.02	.00	.00	50.08	.10	4.19	13.48	7.76	19.46	11.95	32.94	.00	11.95
90277	.02	.00	.00	49.74	.10	4.19	13.48	7.77	19.52	11.96	33.00	.00	11.96
90278	.03	.00	.00	49.39	.10	4.19	13.48	7.80	19.58	11.99	33.06	.00	11.99
90279	.01	.00	.00	49.05	.10	4.19	13.48	7.82	19.64	12.01	33.12	.00	12.01
90289	.12	.00	.00	47.12	.10	4.20	13.48	7.87	20.16	12.07	33.64	.00	12.07
90292	.03	.00	.00	44.80	.10	4.20	13.48	7.92	20.30	12.12	33.78	.00	12.12
90305	.02	.00	.00	41.91	.10	4.20	13.48	7.99	20.82	12.19	34.31	.00	12.19
90308	.07	.00	.00	39.03	.10	4.20	13.48	8.02	20.93	12.22	34.41	.00	12.22
90309	.24	.00	.00	38.32	.11	4.20	13.48	8.05	20.96	12.26	34.44	.00	12.26
90310	.02	.00	.00	37.97	.11	4.20	13.48	8.07	20.99	12.27	34.47	.00	12.27
90318	.25	.00	.00	36.40	.11	4.20	13.48	8.19	21.22	12.39	34.71	.00	12.39
90319	.03	.00	.00	34.86	.11	4.20	13.48	8.21	21.25	12.42	34.73	.00	12.42
90324	.12	.00	.00	33.87	.11	4.20	13.48	8.31	21.38	12.51	34.86	.00	12.51

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	=	13.380 IN
PRECIP., NET	=	13.380 IN
PREDICTED RUNOFF	=	.460 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	4.205 IN
ACTUAL SOIL EVAP	=	8.715 IN
TOTAL ET	=	12.920 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.920 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN

WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.01	.00	25.55	.10	.00	.00	.04	1.82	.04	1.82	.00	.04		
91084	.06	.00	.00	32.55	.10	.00	.00	.08	1.86	.08	1.86	.00	.08		
91085	.29	.06	.00	32.87	.11	.00	.00	.12	1.90	.13	1.90	.00	.13		
91086	.17	.02	.00	33.19	.11	.00	.00	.17	1.94	.17	1.94	.00	.17		
91087	.15	.02	.00	33.51	.11	.00	.00	.21	1.99	.21	1.99	.00	.21		
91088	.19	.03	.00	33.84	.12	.00	.01	.26	2.03	.26	2.04	.00	.26		
91089	.22	.04	.00	34.17	.12	.01	.01	.30	2.08	.31	2.09	.00	.31		
91090	.25	.05	.00	34.50	.12	.01	.01	.35	2.12	.36	2.14	.00	.36		
91091	.28	.07	.00	34.83	.13	.02	.02	.40	2.17	.42	2.19	.00	.42		
91092	.02	.00	.00	35.17	.13	.03	.03	.44	2.22	.47	2.25	.00	.47		
91093	.02	.00	.00	35.51	.13	.04	.04	.48	2.27	.52	2.31	.00	.52		
91094	.05	.00	.00	35.85	.13	.06	.06	.52	2.32	.57	2.37	.00	.57		
91096	.21	.04	.00	36.36	.13	.09	.09	.58	2.42	.68	2.51	.00	.68		
91100	.02	.00	.00	37.41	.13	.19	.19	.69	2.63	.88	2.83	.00	.88		
91102	.01	.00	.00	38.46	.12	.25	.25	.74	2.75	.99	3.00	.00	.99		
91105	.05	.00	.00	39.35	.12	.35	.35	.81	2.92	1.16	3.28	.00	1.16		
91106	.05	.00	.00	40.07	.12	.38	.39	.85	2.98	1.23	3.37	.00	1.23		
91107	.10	.00	.00	40.43	.12	.42	.42	.91	3.05	1.33	3.47	.00	1.33		
91108	.03	.00	.00	40.79	.12	.46	.46	.94	3.11	1.39	3.57	.00	1.39		
91109	.03	.00	.00	41.15	.12	.49	.50	.96	3.17	1.45	3.67	.00	1.45		
91116	.01	.00	.00	42.59	.11	.67	.80	1.09	3.64	1.76	4.45	.00	1.76		
91119	.05	.00	.00	44.40	.11	.72	.95	1.16	3.86	1.88	4.81	.00	1.88		
91120	.09	.00	.00	45.12	.11	.74	1.00	1.23	3.93	1.97	4.93	.00	1.97		
91121	.01	.00	.00	45.48	.10	.76	1.05	1.25	4.01	2.01	5.06	.00	2.01		
91123	.02	.00	.00	46.02	.10	.78	1.16	1.28	4.16	2.06	5.32	.00	2.06		
91128	.12	.00	.00	47.26	.10	.82	1.43	1.42	4.56	2.24	6.00	.00	2.24		
91129	.22	.00	.00	48.32	.11	.85	1.49	1.50	4.65	2.35	6.14	.00	2.35		
91130	.25	.00	.00	48.67	.11	.88	1.55	1.59	4.73	2.47	6.28	.00	2.47		
91131	.37	.00	.00	49.02	.12	.94	1.61	1.67	4.82	2.61	6.42	.00	2.61		
91132	.01	.00	.00	49.36	.11	.99	1.67	1.72	4.90	2.70	6.57	.00	2.70		
91134	.21	.00	.00	49.87	.11	1.07	1.79	1.89	5.08	2.96	6.87	.00	2.96		
91137	.16	.00	.00	50.72	.11	1.16	1.98	2.13	5.35	3.29	7.32	.00	3.29		
91138	.55	.00	.00	51.39	.12	1.23	2.04	2.22	5.44	3.45	7.48	.00	3.45		
91139	.38	.00	.00	51.72	.12	1.29	2.10	2.31	5.53	3.61	7.63	.00	3.61		
91140	.02	.00	.00	52.04	.12	1.36	2.17	2.41	5.62	3.76	7.79	.00	3.76		
91141	.01	.00	.00	52.37	.12	1.42	2.23	2.49	5.72	3.91	7.95	.00	3.91		
91145	.25	.00	.00	53.16	.11	1.60	2.50	2.76	6.10	4.35	8.61	.00	4.35		
91147	.28	.00	.00	54.09	.11	1.69	2.64	2.95	6.30	4.64	8.94	.00	4.64		
91148	.01	.00	.00	54.55	.11	1.72	2.71	3.03	6.40	4.76	9.11	.00	4.76		
91149	.02	.00	.00	54.85	.10	1.75	2.78	3.13	6.50	4.89	9.28	.00	4.89		
91150	.12	.00	.00	55.14	.11	1.78	2.85	3.20	6.60	4.98	9.45	.00	4.98		
91151	.03	.00	.00	55.44	.10	1.80	2.92	3.30	6.71	5.11	9.63	.00	5.11		
91154	.03	.00	.00	56.01	.10	1.88	3.14	3.36	7.02	5.24	10.16	.00	5.24		
91155	.12	.00	.00	56.56	.10	1.89	3.21	3.45	7.12	5.35	10.33	.00	5.35		
91156	.57	.00	.00	56.84	.11	1.95	3.28	3.56	7.23	5.51	10.51	.00	5.51		
91157	.15	.00	.00	57.10	.11	2.01	3.36	3.67	7.34	5.68	10.70	.00	5.68		
91158	.12	.00	.00	57.37	.11	2.06	3.43	3.77	7.45	5.84	10.88	.00	5.84		
91159	.01	.00	.00	57.63	.11	2.10	3.51	3.88	7.55	5.98	11.06	.00	5.98		
91171	.91	.00	.00	59.17	.10	2.25	4.44	4.15	8.90	6.40	13.34	.00	6.40		
91173	.03	.00	.00	60.67	.11	2.39	4.60	4.33	9.13	6.73	13.73	.00	6.73		
91174	.02	.00	.00	60.95	.11	2.44	4.68	4.44	9.24	6.88	13.92	.00	6.88		
91175	.02	.00	.00	61.14	.11	2.48	4.76	4.51	9.36	6.99	14.12	.00	6.99		
91176	.03	.00	.00	61.31	.10	2.50	4.84	4.58	9.47	7.08	14.32	.00	7.08		
91177	.01	.00	.00	61.48	.10	2.52	4.92	4.62	9.59	7.14	14.51	.00	7.14		
91179	.11	.00	.00	61.73	.10	2.55	5.08	4.74	9.83	7.29	14.91	.00	7.29		
91181	.05	.00	.00	62.03	.10	2.56	5.25	4.81	10.06	7.37	15.31	.00	7.37		
91182	.02	.00	.00	62.25	.10	2.60	5.33	4.81	10.18	7.41	15.51	.00	7.41		
91191	.10	.00	.00	62.86	.10	2.61	6.07	4.89	11.25	7.50	17.32	.00	7.50		
91195	.03	.00	.00	63.46	.10	2.62	6.40	4.91	11.72	7.53	18.12	.00	7.53		
91206	.22	.00	.00	63.80	.10	2.65	7.30	5.03	13.02	7.68	20.31	.00	7.68		
91207	.12	.00	.00	63.87	.10	2.67	7.38	5.13	13.13	7.80	20.51	.00	7.80		
91213	.29	.00	.00	63.78	.10	2.74	7.86	5.29	13.82	8.02	21.68	.00	8.02		
91214	.02	.00	.00	63.63	.10	2.75	7.94	5.33	13.93	8.08	21.87	.00	8.08		
91218	.06	.00	.00	63.47	.10	2.79	8.25	5.43	14.38	8.22	22.63	.00	8.22		
91235	.09	.00	.00	62.33	.10	2.81	9.49	5.52	16.17	8.33	25.66	.00	8.33		

91239	.28	.00	.00	60.69	.10	2.85	9.76	5.61	16.56	8.46	26.32	.00	8.46
91240	.61	.00	.00	60.20	.12	2.91	9.83	5.69	16.66	8.61	26.49	.00	8.61
91251	.24	.00	.00	58.86	.11	3.15	10.51	6.17	17.65	9.32	28.16	.00	9.32
91252	.03	.00	.00	57.39	.10	3.17	10.57	6.23	17.73	9.40	28.31	.00	9.40
91254	.84	.00	.00	56.99	.11	3.23	10.69	6.34	17.90	9.57	28.59	.00	9.57
91256	.01	.00	.00	56.45	.12	3.34	10.80	6.49	18.06	9.83	28.86	.00	9.83
91257	.19	.00	.00	56.03	.12	3.39	10.86	6.57	18.14	9.97	28.99	.00	9.97
91272	.11	.00	.00	53.63	.10	3.56	11.51	7.05	19.21	10.60	30.72	.00	10.60
91277	.10	.00	.00	50.41	.10	3.56	11.51	7.15	19.52	10.71	31.03	.00	10.71
91290	.06	.00	.00	47.29	.10	3.56	11.51	7.23	20.21	10.79	31.72	.00	10.79
91291	.01	.00	.00	44.80	.10	3.59	11.51	7.23	20.26	10.82	31.77	.00	10.82
91295	.12	.00	.00	43.89	.10	3.59	11.51	7.27	20.43	10.86	31.94	.00	10.86
91298	.01	.00	.00	42.63	.10	3.59	11.51	7.32	20.56	10.91	32.07	.00	10.91
91299	.18	.00	.00	41.90	.10	3.59	11.51	7.36	20.60	10.95	32.11	.00	10.95
91300	.28	.00	.00	41.54	.11	3.59	11.51	7.40	20.64	10.99	32.15	.00	10.99
91301	.06	.00	.00	41.18	.11	3.59	11.51	7.44	20.68	11.03	32.19	.00	11.03
91302	.01	.00	.00	40.82	.11	3.59	11.51	7.48	20.72	11.07	32.22	.00	11.07
91304	.24	.00	.00	40.28	.11	3.59	11.51	7.55	20.79	11.13	32.30	.00	11.13
91305	.12	.00	.00	39.74	.12	3.59	11.51	7.58	20.82	11.17	32.33	.00	11.17
91309	.18	.00	.00	38.85	.12	3.59	11.51	7.72	20.96	11.31	32.47	.00	11.31
91310	.14	.00	.00	37.97	.12	3.59	11.51	7.75	20.99	11.34	32.50	.00	11.34
91313	.09	.00	.00	37.26	.12	3.59	11.51	7.84	21.08	11.43	32.59	.00	11.43
91316	.04	.00	.00	36.22	.12	3.59	11.51	7.93	21.17	11.52	32.68	.00	11.52
91317	.06	.00	.00	35.54	.12	3.59	11.51	7.96	21.20	11.54	32.71	.00	11.54
91322	.07	.00	.00	34.53	.12	3.59	11.51	8.09	21.33	11.67	32.84	.00	11.67
91323	.04	.00	.00	33.54	.12	3.59	11.51	8.11	21.35	11.70	32.86	.00	11.70
91324	.12	.00	.00	33.22	.12	3.59	11.51	8.14	21.38	11.72	32.89	.00	11.72
91325	.09	.00	.00	32.90	.13	3.59	11.51	8.16	21.40	11.75	32.91	.00	11.75
91326	.01	.00	.00	32.58	.13	3.59	11.51	8.18	21.42	11.77	32.93	.00	11.77

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	= 13.010 IN
PRECIP., NET	= 13.010 IN
PREDICTED RUNOFF	= .333 IN
DEEP PERCOLATION	= .000 IN
ACTUAL PLANT EVAP	= 3.587 IN
ACTUAL SOIL EVAP	= 8.836 IN
TOTAL ET	= 12.423 IN
TOTAL INTERCEPTION	= .000 IN
TOTAL INT PLUS ET	= 12.423 IN
BEGIN SOIL WATER	= .000 IN
FINAL SOIL WATER	= .254 IN
IRRIGATION APPLIED	= .000 IN
WATER BUDGET BAL.	= .000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	= 12.783
PREDICTED RUNOFF	= .611
DEEP PERCOLATION	= .000
TOTAL ET	= 12.904
IRRIGATION APPLIED	= .000
AVG. AVAL. STORAGE	= 10.400 IN
FINAL AVAL. STORAGE	= 10.546 IN

FINAL STORAGE FOR EACH FRACTION

.000	.000	.078	.177	.000	.000	.000	.000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

ROCKER DEEP-TILL SIMULATION

1989-1991

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.440	.000	5.828	.000
FEB	.000	.000	.000	.455	.000	5.359	.000
MAR	1.245	1.245	.182	.978	.000	4.980	.000
APR	3.735	3.735	.857	3.613	.000	5.536	.000
MAY	1.480	1.480	.000	2.203	.000	3.785	.000
JUN	.920	.920	.000	1.099	.000	3.645	.000
JUL	1.070	1.070	.000	1.007	.000	3.636	.000
AUG	2.180	2.180	.000	2.069	.000	3.754	.000
SEP	.300	.300	.000	.474	.000	3.622	.000
OCT	.860	.860	.000	.552	.000	3.853	.000
NOV	.170	.170	.000	.478	.000	3.741	.000
DEC	.000	.000	.000	.000	.000	3.600	.000
TOT	11.960	11.960	1.039	13.369	.000	4.278	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	3.600	.000
FEB	.000	.000	.000	.000	.000	3.600	.000
MAR	1.115	1.115	.137	.353	.000	3.661	.000
APR	2.875	2.875	.323	2.325	.000	4.612	.000
MAY	3.500	3.500	.000	3.681	.000	3.966	.000
JUN	1.210	1.210	.000	1.880	.000	3.678	.000
JUL	1.150	1.150	.000	.755	.000	3.626	.000
AUG	2.000	2.000	.000	2.395	.000	3.709	.000
SEP	.500	.500	.000	.500	.000	3.608	.000
OCT	.280	.280	.000	.280	.000	3.613	.000
NOV	.750	.750	.000	.511	.000	3.850	.000
DEC	.000	.000	.000	.239	.000	3.669	.000
TOT	13.380	13.380	.460	12.920	.000	3.766	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	3.600	.000
FEB	.000	.000	.000	.000	.000	3.600	.000
MAR	1.475	1.475	.231	.362	.000	3.716	.000
APR	1.025	1.025	.102	1.608	.000	4.246	.000
MAY	3.040	3.040	.000	3.137	.000	3.906	.000
JUN	2.180	2.180	.000	2.263	.000	3.737	.000
JUL	.490	.490	.000	.507	.000	3.609	.000
AUG	1.350	1.350	.000	1.059	.000	3.676	.000
SEP	1.420	1.420	.000	1.686	.000	3.770	.000
OCT	1.070	1.070	.000	.512	.000	3.687	.000
NOV	.960	.960	.000	.806	.000	4.370	.000
DEC	.000	.000	.000	.484	.000	4.075	.000
TOT	13.010	13.010	.333	12.423	.000	3.833	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.147	.000	4.343	.000
FEB	.000	.000	.000	.152	.000	4.186	.000
MAR	1.278	1.278	.183	.565	.000	4.119	.000
APR	2.545	2.545	.428	2.515	.000	4.798	.000
MAY	2.673	2.673	.000	3.007	.000	3.886	.000
JUN	1.437	1.437	.000	1.748	.000	3.686	.000
JUL	.903	.903	.000	.756	.000	3.624	.000
AUG	1.843	1.843	.000	1.841	.000	3.713	.000
SEP	.740	.740	.000	.887	.000	3.667	.000
OCT	.737	.737	.000	.448	.000	3.718	.000
NOV	.627	.627	.000	.598	.000	3.987	.000
DEC	.000	.000	.000	.241	.000	3.781	.000
TOT	12.783	12.783	.611	12.904	.000	3.959	.000

****
SNOW NOTICE
****
DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf07ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

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CARD   1:SILVER BOW CREEK RI/FS
CARD   2:ROCKER DEEP-PLOW PLOT
CARD   3:1989-1991
CARD   4:      89      91       2       1       0
CARD   5:    .050    .100    .850 100.0002000.000
CARD   6:       2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:       1   1.000    .060
CARD  14:       3
CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  16:       1   1.000
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
ROCKER DEEP-PLOW PLOT
1989-1991

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.01
2	.010	2.65	.01
3	.030	1.80	.09
4	.300	1.60	.23
5	.200	2.65	.66

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600 ACRES
SLOPE LENGTH	1450.00 FT
AVERAGE SLOPE	.0199

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.060

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .18 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .03 TONS/ACRE
ENRICHMENT RATIO 1.138

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR APR, 1989

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20 STORMS PRODUCED     3.74 IN. OF RAINFALL
 7 STORMS PRODUCED      .86 IN. OF RUNOFF

        VALUES FROM OVERLAND FLOW
        -------------------------
     MONTHLY SOIL LOSS    .23 TONS/ACRE
     ENRICHMENT RATIO    1.005

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

        MONTHLY SUMMARY FOR MAY, 1989
        ----------------------------

18 STORMS PRODUCED     1.48 IN. OF RAINFALL
 0 STORMS PRODUCED      .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

        MONTHLY SUMMARY FOR JUN, 1989
        ----------------------------

 9 STORMS PRODUCED      .92 IN. OF RAINFALL
 0 STORMS PRODUCED      .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

        MONTHLY SUMMARY FOR JUL, 1989
        ----------------------------

11 STORMS PRODUCED     1.07 IN. OF RAINFALL
 0 STORMS PRODUCED      .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

        MONTHLY SUMMARY FOR AUG, 1989
        ----------------------------

19 STORMS PRODUCED     2.18 IN. OF RAINFALL
 0 STORMS PRODUCED      .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

        MONTHLY SUMMARY FOR SEP, 1989
        ----------------------------

 5 STORMS PRODUCED      .30 IN. OF RAINFALL
 0 STORMS PRODUCED      .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

        MONTHLY SUMMARY FOR OCT, 1989
        ----------------------------

13 STORMS PRODUCED      .86 IN. OF RAINFALL
 0 STORMS PRODUCED      .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
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MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
13 STORMS PRODUCED 1.04 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .26 TONS/ACRE
ENRICHMENT RATIO 1.021

MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
5 STORMS PRODUCED .14 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .02 TONS/ACRE
ENRICHMENT RATIO 1.146

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
4 STORMS PRODUCED .32 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .07 TONS/ACRE
ENRICHMENT RATIO 1.029

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
9 STORMS PRODUCED .46 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .09 TONS/ACRE
ENRICHMENT RATIO 1.057

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .23 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .04 TONS/ACRE
ENRICHMENT RATIO 1.132

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .10 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .02 TONS/ACRE
ENRICHMENT RATIO 1.099

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1991

11 STORMS PRODUCED .96 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991

94 STORMS PRODUCED 13.01 IN. OF RAINFALL
9 STORMS PRODUCED .33 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .06 TONS/ACRE
ENRICHMENT RATIO 1.121

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
ROCKER DEEP-PLOW PLOT
1989-1991

STORM SUMMARY

314 STORMS PRODUCED 38.35 IN. OF RAINFALL
31 STORMS PRODUCED 1.83 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.01	257.	.0017	.0000	27.
2	.01	198.	.0013	.0000	21.
3	.09	1779.	.0116	.0002	187.
4	.24	4495.	.0294	.0005	472.
5	.64	12186.	.0798	.0013	1279.
TOTAL		18914.	.1239	.0020	1985.

TOTAL SOIL LOSS FOR AREA .41 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES

AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.052
SILT	.104
SAND	.844
ORGANIC MATTER	.001

INDEX OF SPECIFIC SURFACE 6.88 M**2/G OF TOTAL SEDIMENT

ENRICHMENT RATIO OF SPECIFIC SURFACE 1.043

OPPORTUNITY

GLEAMS HYDROLOGY
PARAMETER FILES

RF08
RF09

```
SILVER BOW CREEK
OPPORTUNITY CONTROL SIMULATION
1989-1991
   89001        1        0        0        0        0        0        0        1
0
      50

    22.96     .142      .85      3.3       94     .015      2.0      6.0
        0        1      6.0
     0.60
     0.45
      0.3
      .14
      1.0
     15.0
     30.0
     38.0     27.0     44.0     57.0     63.0     75.0     85.0     75.0     71.0     57.0
     47.0     36.0
     16.0      3.0     21.0     29.0     35.0     44.0     49.0     45.0     38.0     31.0
     26.0     15.0
    150.0    230.0    320.0    370.0    430.0    500.0    640.0    520.0    380.0    270.0
    140.0    130.0
       89       91        3
       79     1070     1366             60.0        1       70      270

       79     2070     2366             60.0        1       70      270

       79     3070     3366             60.0        1       70      270

        0
       79        7
      0.0     00.0
       .1      .05
       .2       .1
       .7       .1
       .8      .15
       .9      .08
      1.0      0.0
        0        0
        0        0
       -1        0
```

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SILVER BOW CREEK
OPPORTUNITY DEEP-TILL SIMULATION
1989-1991
   89001        1        0        0        0        0        0        0        1
0
      50

   22.96       .5      .85      3.3       65     .015      2.0     60.0
       0        2     36.0     60.0
      .6      0.6
     .45      .45
     0.3      0.2
    1.42     .701
     1.0      1.0
    15.0     20.0
    30.0     35.0
    38.0     27.0     44.0     57.0     63.0     75.0     85.0     75.0     71.0     57.0
    47.0     36.0
    16.0      3.0     21.0     29.0     35.0     44.0     49.0     45.0     38.0     31.0
    26.0     15.0
   150.0    230.0    320.0    370.0    430.0    500.0    640.0    520.0    380.0    270.0
   140.0    130.0
      89       91        3
      79     1070     1366             60.0        1       70      270

      79     2070     2366             60.0        1       70      270

      79     3070     3366             60.0        1       70      270

       0
      79        7
     0.0       00.0
      .1        2.0
      .2        2.8
      .7        2.8
      .8        1.8
      .9         .9
     1.0        0.0
       0          0
       0          0
      -1          0
```

OPPORTUNITY

GLEAMS EROSION PARAMETER FILES

RF08
RF09

```
SILVER BOW CREEK RI/FS
OPPORTUNITY CONTROL PLOT
1989-1991
      89       91        2        1        0
   100.0
       2    22.96
  1400.0     .015   1450.0      .3
       1      1.0      .26
       3
     001
       1
       1
       1      1.0
     1.0
     1.0
    .015
     1.0
     1.0
    .015
     1.0
     1.0
    .015
```

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SILVER BOW CREEK RI/FS
OPPORTUNITY DEEP-PLOW PLOT
1989-1991
      89       91        2        1        0
   100.0
       2    22.96
  1400.0     .015  1450.0       .3
       1      1.0     .26
       3
     001
       1
       1
       1      1.0
      .2
     1.0
    .015
      .2
     1.0
    .015
      .2
     1.0
    .015
```

OPPORTUNITY

GLEAMS HYDROLOGY/EROSION OUTPUT

RF08

HYDROLOGY INPUT PARAMETER FILENAME: rf08.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
OPPORTUNITY CONTROL SIMULATION
1989-1991

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	70	.00
0	1	99	.05
0	1	129	.10
0	1	277	.10
0	1	306	.15
0	1	336	.08
0	1	366	.00
0	2	70	.00
0	2	99	.05
0	2	129	.10
0	2	277	.10
0	2	306	.15
0	2	336	.08
0	2	366	.00
0	3	70	.00
0	3	99	.05
0	3	129	.10
0	3	277	.10
0	3	306	.15
0	3	336	.08
0	3	366	.00

FIELD AREA	=	22.960 ACRES
ROOTING DEPTH	=	6.000 IN
SATURATED CONDUCTIVITY	=	.142 IN/HR
AVG. FUL	=	.500
AVG. FIELD CAPACITY	=	.450 IN/IN
INITIAL STORAGE FRACTION	=	.850
EVAPORATION COEFFICIENT	=	3.300
AVERAGE POROSITY	=	.600 CC/CC
SCS CURVE NUMBER	=	94.000
CHANNEL SLOPE	=	.015 FT/FT
WATERSHED LEN/WIDTH RATIO	=	2.000
PEAK FLOW RATE COEFFICIENT	=	34.276
PEAK FLOW RATE EXPONENT	=	.868
UPPER LIMIT OF STORAGE	=	1.800 IN
AVG. 15-BAR WATER CONTENT	=	.300 IN/IN
INITIAL SOIL WATER STORAGE	=	.765 IN
FRAC. P.A.W. TO BEGIN IRR.	=	.000
FRAC. P.A.W. TO END IRR.	=	.000

UPPER LIMIT OF STORAGES, IN

.118	.841	.841

INITIAL PLANT AVAILABLE STORAGE, IN
.050 .357 .357

POROSITY BY LAYER (CC/CC)
.600 .600 .600

FUL BY LAYER (IN/IN)
.500 .500 .500

FEILD CAPACITY BY LAYER (IN/IN)
.450 .450 .450

FIELD CAPACITY BY LAYER (IN)
.177 1.261 1.261

15-BAR WATER CONTENT BY LAYER (IN/IN)
.300 .300 .300

WATER CONTENT AT WILT. PT. BY LAYER (IN)
.118 .841 .841

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.34	.00	.00	.78	1.82	.78	1.82	.00	.78		
89084	.05	.00	.00	32.55	.30	.00	.00	.83	1.86	.83	1.86	.00	.83		
89085	.17	.04	.00	32.87	.32	.00	.00	.87	1.90	.87	1.90	.00	.87		
89086	.12	.02	.00	33.19	.32	.00	.00	.94	1.98	.94	1.98	.00	.94		
89087	.20	.06	.00	33.51	.33	.00	.00	1.02	2.06	1.02	2.06	.00	1.02		
89088	.19	.06	.00	33.84	.34	.00	.00	1.10	2.14	1.10	2.14	.00	1.10		
89089	.23	.08	.00	34.17	.35	.00	.00	1.19	2.22	1.19	2.22	.00	1.19		
89090	.26	.10	.00	34.50	.36	.00	.00	1.27	2.30	1.27	2.30	.00	1.27		
89091	.28	.13	.00	34.83	.38	.00	.00	1.35	2.39	1.36	2.39	.00	1.36		
89092	.37	.20	.00	35.17	.39	.00	.00	1.44	2.47	1.44	2.47	.00	1.44		
89093	.36	.20	.00	35.51	.40	.00	.00	1.53	2.56	1.53	2.56	.00	1.53		
89094	.38	.22	.00	35.85	.42	.00	.00	1.62	2.65	1.62	2.65	.00	1.62		
89095	.42	.25	.00	36.19	.43	.00	.00	1.71	2.74	1.71	2.75	.00	1.71		
89096	.45	.28	.00	36.54	.45	.00	.00	1.78	2.84	1.78	2.84	.00	1.78		
89097	.49	.31	.07	36.88	.45	.00	.00	1.87	2.93	1.88	2.93	.00	1.88		
89098	.05	.00	.00	37.23	.44	.00	.00	1.97	3.03	1.97	3.03	.00	1.97		
89099	.05	.00	.00	37.58	.44	.01	.01	2.05	3.12	2.05	3.13	.00	2.05		
89100	.01	.00	.00	37.93	.42	.01	.01	2.15	3.22	2.15	3.23	.00	2.15		
89106	.05	.00	.00	39.17	.40	.01	.01	2.38	3.85	2.39	3.87	.00	2.39		
89107	.15	.00	.00	40.43	.40	.02	.02	2.49	3.96	2.51	3.98	.00	2.51		
89111	.01	.00	.00	41.33	.38	.02	.02	2.61	4.42	2.63	4.45	.00	2.63		
89112	.10	.00	.00	42.23	.38	.02	.02	2.69	4.54	2.71	4.57	.00	2.71		
89113	.18	.00	.00	42.59	.39	.03	.03	2.81	4.66	2.84	4.69	.00	2.84		
89114	.13	.00	.00	42.96	.39	.03	.03	2.91	4.79	2.94	4.82	.00	2.94		
89115	.03	.00	.00	43.32	.39	.03	.03	2.97	4.91	3.00	4.94	.00	3.00		
89117	.19	.00	.00	43.86	.39	.04	.04	3.13	5.17	3.16	5.20	.00	3.16		
89118	.02	.00	.00	44.40	.39	.04	.04	3.18	5.30	3.22	5.34	.00	3.22		
89119	.01	.00	.00	44.76	.38	.04	.04	3.22	5.43	3.26	5.47	.00	3.26		
89122	.02	.00	.00	45.48	.37	.05	.05	3.31	5.84	3.36	5.89	.00	3.36		
89127	.02	.00	.00	46.91	.36	.07	.07	3.42	6.55	3.49	6.62	.00	3.49		
89128	.06	.00	.00	47.27	.35	.07	.07	3.47	6.70	3.54	6.77	.00	3.54		
89129	.02	.00	.00	48.32	.35	.08	.08	3.51	6.85	3.59	6.92	.00	3.59		
89130	.01	.00	.00	48.67	.34	.08	.08	3.54	7.00	3.62	7.08	.00	3.62		
89131	.15	.00	.00	49.02	.35	.08	.08	3.66	7.15	3.74	7.23	.00	3.74		
89132	.01	.00	.00	49.36	.35	.09	.09	3.68	7.30	3.77	7.39	.00	3.77		
89133	.10	.00	.00	49.70	.35	.09	.09	3.76	7.46	3.86	7.55	.00	3.86		
89134	.01	.00	.00	50.04	.34	.10	.10	3.79	7.62	3.89	7.72	.00	3.89		
89135	.13	.00	.00	50.38	.35	.10	.10	3.90	7.78	4.00	7.88	.00	4.00		
89136	.01	.00	.00	50.72	.34	.11	.11	3.92	7.94	4.03	8.05	.00	4.03		
89138	.17	.00	.00	51.22	.34	.11	.11	4.08	8.27	4.19	8.38	.00	4.19		
89139	.01	.00	.00	51.72	.34	.12	.12	4.10	8.44	4.22	8.55	.00	4.22		
89143	.01	.00	.00	52.53	.33	.14	.14	4.18	9.12	4.32	9.25	.00	4.32		
89144	.04	.00	.00	53.32	.33	.14	.14	4.21	9.29	4.35	9.43	.00	4.35		
89145	.01	.00	.00	53.63	.33	.14	.15	4.24	9.47	4.38	9.61	.00	4.38		
89148	.50	.02	.00	54.25	.34	.16	.16	4.45	10.00	4.60	10.16	.00	4.60		

89149	.20	.00	.00	54.85	.38	.16	.17	4.61	10.19	4.77	10.35	.00	4.77
89153	.01	.00	.00	55.58	.36	.18	.19	4.73	10.93	4.91	11.11	.00	4.91
89154	.02	.00	.00	56.29	.35	.19	.19	4.77	11.12	4.96	11.31	.00	4.96
89161	.17	.00	.00	57.36	.33	.22	.23	5.02	12.47	5.24	12.70	.00	5.24
89166	.25	.00	.00	58.85	.32	.24	.25	5.29	13.47	5.53	13.72	.00	5.53
89167	.31	.00	.00	59.54	.34	.24	.26	5.49	13.67	5.74	13.93	.00	5.74
89168	.01	.00	.00	59.76	.34	.25	.27	5.53	13.88	5.78	14.14	.00	5.78
89171	.09	.00	.00	60.17	.33	.27	.28	5.64	14.49	5.90	14.78	.00	5.90
89175	.03	.00	.00	60.86	.32	.28	.30	5.72	15.32	6.00	15.63	.00	6.00
89178	.03	.00	.00	61.48	.31	.29	.32	5.78	15.96	6.07	16.28	.00	6.07
89193	.03	.00	.00	62.71	.30	.30	.41	5.87	19.15	6.16	19.56	.00	6.16
89194	.12	.00	.00	63.50	.30	.30	.41	5.96	19.37	6.26	19.78	.00	6.26
89197	.06	.00	.00	63.62	.30	.30	.43	6.04	20.01	6.34	20.44	.00	6.34
89198	.09	.00	.00	63.73	.30	.31	.44	6.11	20.22	6.41	20.66	.00	6.41
89203	.12	.00	.00	63.82	.30	.32	.47	6.22	21.28	6.54	21.74	.00	6.54
89204	.02	.00	.00	63.88	.30	.32	.47	6.23	21.49	6.55	21.96	.00	6.55
89205	.12	.00	.00	63.88	.31	.33	.48	6.33	21.70	6.65	22.18	.00	6.65
89208	.35	.00	.00	63.87	.31	.33	.49	6.56	22.33	6.90	22.82	.00	6.90
89209	.07	.00	.00	63.83	.33	.34	.50	6.62	22.53	6.96	23.03	.00	6.96
89211	.07	.00	.00	63.79	.32	.35	.51	6.69	22.95	7.04	23.46	.00	7.04
89212	.02	.00	.00	63.73	.33	.35	.52	6.71	23.15	7.06	23.67	.00	7.06
89213	.10	.00	.00	63.68	.33	.36	.52	6.79	23.36	7.14	23.88	.00	7.14
89220	.08	.00	.00	63.42	.32	.38	.56	6.94	24.77	7.32	25.33	.00	7.32
89221	.12	.00	.00	63.09	.31	.38	.57	7.04	24.96	7.42	25.53	.00	7.42
89223	.20	.00	.00	62.94	.31	.39	.58	7.21	25.35	7.60	25.93	.00	7.60
89224	.03	.00	.00	62.77	.32	.39	.58	7.24	25.55	7.63	26.13	.00	7.63
89225	.03	.00	.00	62.65	.32	.40	.59	7.26	25.74	7.66	26.33	.00	7.66
89230	.02	.00	.00	62.26	.31	.41	.61	7.34	26.68	7.74	27.29	.00	7.74
89231	.01	.00	.00	61.82	.30	.41	.62	7.36	26.87	7.77	27.48	.00	7.77
89232	.05	.00	.00	61.66	.31	.41	.62	7.40	27.05	7.81	27.67	.00	7.81
89233	.02	.00	.00	61.50	.31	.41	.63	7.42	27.23	7.83	27.86	.00	7.83
89235	.80	.11	.00	61.24	.35	.42	.64	7.58	27.59	7.99	28.23	.00	7.99
89236	.45	.06	.00	60.97	.43	.42	.64	7.76	27.77	8.18	28.41	.00	8.18
89237	.06	.00	.00	60.79	.41	.43	.65	7.90	27.95	8.33	28.59	.00	8.33
89238	.01	.00	.00	60.59	.40	.43	.65	8.00	28.12	8.43	28.77	.00	8.43
89239	.08	.00	.00	60.40	.40	.44	.66	8.06	28.30	8.50	28.95	.00	8.50
89240	.02	.00	.00	60.20	.39	.44	.66	8.14	28.47	8.58	29.13	.00	8.58
89241	.01	.00	.00	59.99	.38	.44	.66	8.19	28.64	8.64	29.30	.00	8.64
89242	.01	.00	.00	59.78	.37	.45	.67	8.24	28.81	8.69	29.47	.00	8.69
89243	.08	.00	.00	59.56	.38	.45	.67	8.30	28.97	8.76	29.65	.00	8.76
89245	.01	.00	.00	59.22	.37	.46	.68	8.37	29.30	8.84	29.98	.00	8.84
89252	.03	.00	.00	58.15	.35	.49	.71	8.53	30.40	9.03	31.11	.00	9.03
89253	.02	.00	.00	57.13	.33	.50	.72	8.57	30.55	9.07	31.27	.00	9.07
89260	.12	.00	.00	56.03	.32	.52	.74	8.77	31.55	9.29	32.29	.00	9.29
89262	.12	.00	.00	54.73	.32	.52	.75	8.88	31.82	9.40	32.57	.00	9.40
89274	.22	.00	.00	52.54	.31	.53	.78	9.10	33.29	9.63	34.07	.00	9.63
89275	.10	.00	.00	50.42	.32	.53	.78	9.18	33.40	9.71	34.18	.00	9.71
89276	.01	.00	.00	50.08	.32	.53	.78	9.20	33.51	9.73	34.29	.00	9.73
89277	.10	.00	.00	49.74	.32	.53	.78	9.28	33.62	9.81	34.39	.00	9.81
89279	.05	.00	.00	49.22	.32	.53	.78	9.34	33.83	9.87	34.60	.00	9.87
89284	.02	.00	.00	48.00	.31	.53	.78	9.41	34.32	9.94	35.10	.00	9.94
89285	.02	.00	.00	46.95	.31	.53	.78	9.43	34.41	9.96	35.19	.00	9.96
89297	.02	.00	.00	44.61	.30	.54	.78	9.51	35.41	10.05	36.19	.00	10.05
89298	.06	.00	.00	42.27	.30	.54	.78	9.56	35.49	10.10	36.27	.00	10.10
89299	.01	.00	.00	41.90	.30	.54	.78	9.58	35.56	10.12	36.34	.00	10.12
89300	.02	.00	.00	41.54	.30	.54	.78	9.60	35.63	10.13	36.41	.00	10.13
89301	.06	.00	.00	41.18	.30	.54	.78	9.65	35.70	10.18	36.48	.00	10.18
89304	.17	.00	.00	40.46	.31	.55	.78	9.72	35.90	10.27	36.68	.00	10.27
89307	.02	.00	.00	39.39	.31	.55	.78	9.76	36.09	10.31	36.87	.00	10.31
89308	.01	.00	.00	38.67	.31	.55	.78	9.79	36.15	10.33	36.93	.00	10.33
89309	.02	.00	.00	38.32	.31	.55	.78	9.80	36.21	10.35	36.98	.00	10.35
89311	.01	.00	.00	37.79	.31	.55	.78	9.84	36.32	10.38	37.10	.00	10.38
89312	.01	.00	.00	37.26	.31	.55	.78	9.86	36.38	10.41	37.15	.00	10.41
89317	.02	.00	.00	36.23	.30	.55	.78	9.91	36.64	10.46	37.41	.00	10.46
89318	.04	.00	.00	35.20	.30	.55	.78	9.94	36.69	10.49	37.46	.00	10.49
89319	.03	.00	.00	34.86	.30	.55	.78	9.97	36.73	10.51	37.51	.00	10.51
89321	.01	.00	.00	34.36	.30	.56	.78	9.98	36.83	10.54	37.60	.00	10.54

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	2.116 IN
DEEP PERCOLATION	=	.066 IN
ACTUAL PLANT EVAP	=	.564 IN
ACTUAL SOIL EVAP	=	9.978 IN
TOTAL ET	=	10.543 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	10.543 IN
BEGIN SOIL WATER	=	.765 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.30	.00	.00	.04	3.27	.04	3.27	.00	.04		
90084	.05	.00	.00	32.55	.30	.00	.00	.09	3.34	.09	3.34	.00	.09		
90085	.09	.01	.00	32.87	.31	.00	.00	.15	3.42	.15	3.42	.00	.15		
90086	.12	.02	.00	33.19	.31	.00	.00	.22	3.50	.22	3.50	.00	.22		
90087	.15	.03	.00	33.51	.32	.00	.00	.30	3.58	.30	3.58	.00	.30		
90088	.18	.05	.00	33.84	.32	.00	.00	.38	3.66	.38	3.66	.00	.38		
90089	.22	.07	.00	34.17	.34	.00	.00	.47	3.74	.47	3.74	.00	.47		
90090	.25	.09	.00	34.50	.35	.00	.00	.55	3.82	.55	3.82	.00	.55		
90091	.28	.12	.00	34.83	.36	.00	.00	.63	3.91	.64	3.91	.00	.64		
90092	.32	.15	.00	35.17	.37	.00	.00	.72	3.99	.72	3.99	.00	.72		
90093	.35	.18	.00	35.51	.39	.00	.00	.81	4.08	.81	4.08	.00	.81		
90094	.32	.17	.00	35.85	.40	.00	.00	.90	4.17	.90	4.17	.00	.90		
90102	.08	.00	.00	37.41	.39	.01	.01	1.02	4.94	1.03	4.95	.00	1.03		
90104	.20	.00	.00	39.17	.40	.01	.01	1.13	5.15	1.14	5.16	.00	1.14		
90105	.02	.00	.00	39.71	.41	.01	.01	1.15	5.26	1.16	5.27	.00	1.16		
90108	.09	.00	.00	40.43	.40	.01	.01	1.24	5.59	1.25	5.61	.00	1.25		
90112	.14	.00	.00	41.69	.40	.02	.02	1.37	6.06	1.40	6.08	.00	1.40		
90113	.03	.00	.00	42.59	.41	.02	.02	1.40	6.18	1.42	6.21	.00	1.42		
90114	.77	.24	.15	42.96	.45	.03	.03	1.52	6.31	1.55	6.33	.00	1.55		
90115	.01	.00	.00	43.32	.45	.03	.03	1.55	6.43	1.57	6.46	.00	1.57		
90116	.02	.00	.00	43.68	.45	.03	.03	1.56	6.56	1.59	6.59	.00	1.59		
90117	.04	.00	.00	44.04	.45	.03	.03	1.59	6.69	1.63	6.72	.00	1.63		
90118	.06	.00	.00	44.40	.45	.04	.04	1.64	6.82	1.68	6.85	.00	1.68		
90119	.13	.00	.02	44.76	.45	.04	.04	1.75	6.95	1.78	6.99	.00	1.78		
90120	.01	.00	.00	45.12	.45	.04	.04	1.77	7.08	1.81	7.12	.00	1.81		
90122	.07	.00	.00	45.66	.44	.05	.05	1.84	7.35	1.89	7.40	.00	1.89		
90124	.02	.00	.00	46.38	.44	.05	.05	1.87	7.63	1.93	7.69	.00	1.93		
90127	.01	.00	.00	47.27	.44	.06	.06	1.93	8.07	1.99	8.13	.00	1.99		
90128	.03	.00	.00	47.97	.43	.07	.07	1.95	8.22	2.02	8.28	.00	2.02		
90129	.07	.00	.00	48.32	.44	.07	.07	2.01	8.37	2.08	8.44	.00	2.08		
90130	.01	.00	.00	48.67	.43	.08	.08	2.03	8.52	2.11	8.59	.00	2.11		
90131	.03	.00	.00	49.02	.43	.08	.08	2.05	8.67	2.13	8.75	.00	2.13		
90132	.01	.00	.00	49.36	.43	.08	.08	2.08	8.82	2.16	8.91	.00	2.16		
90133	.31	.00	.03	49.70	.45	.09	.09	2.24	8.98	2.32	9.07	.00	2.32		
90134	.13	.00	.02	50.04	.45	.09	.09	2.34	9.14	2.43	9.23	.00	2.43		
90135	.17	.00	.03	50.38	.45	.10	.10	2.48	9.30	2.57	9.39	.00	2.57		
90137	.21	.00	.02	50.89	.45	.10	.10	2.66	9.62	2.76	9.73	.00	2.76		
90138	.12	.00	.02	51.39	.45	.11	.11	2.76	9.79	2.86	9.90	.00	2.86		
90139	.03	.00	.00	51.72	.45	.11	.11	2.78	9.95	2.89	10.07	.00	2.89		
90140	.90	.34	.38	52.04	.45	.12	.12	2.95	10.12	3.06	10.24	.00	3.06		
90141	.01	.00	.00	52.37	.43	.12	.12	3.07	10.29	3.19	10.41	.00	3.19		
90143	.11	.00	.00	52.85	.42	.13	.13	3.24	10.64	3.37	10.77	.00	3.37		
90144	.03	.00	.00	53.32	.41	.14	.14	3.32	10.81	3.46	10.95	.00	3.46		
90145	.15	.00	.00	53.63	.41	.14	.14	3.44	10.99	3.58	11.13	.00	3.58		
90146	.01	.00	.00	53.94	.40	.14	.14	3.50	11.16	3.65	11.31	.00	3.65		
90148	.02	.00	.00	54.40	.39	.15	.15	3.59	11.52	3.75	11.68	.00	3.75		
90149	.24	.00	.00	54.85	.40	.16	.16	3.78	11.71	3.93	11.86	.00	3.93		
90150	.55	.06	.00	55.14	.45	.16	.16	3.96	11.89	4.12	12.05	.00	4.12		
90151	.26	.00	.07	55.44	.45	.17	.17	4.14	12.07	4.31	12.24	.00	4.31		
90152	.01	.00	.00	55.72	.43	.17	.17	4.27	12.26	4.44	12.43	.00	4.44		
90158	.05	.00	.00	56.69	.40	.20	.20	4.53	13.40	4.73	13.60	.00	4.73		
90159	.01	.00	.00	57.63	.38	.21	.21	4.56	13.60	4.77	13.80	.00	4.77		
90160	.20	.00	.00	57.88	.39	.21	.21	4.72	13.79	4.94	14.01	.00	4.94		

90161	.01	.00	.00	58.13	.39	.22	.22	4.76	13.99	4.98	14.21	.00	4.98
90162	.01	.00	.00	58.38	.38	.22	.22	4.80	14.19	5.02	14.41	.00	5.02
90164	.02	.00	.00	58.74	.37	.23	.23	4.86	14.59	5.10	14.82	.00	5.10
90165	.15	.00	.00	59.09	.37	.24	.24	4.98	14.79	5.22	15.03	.00	5.22
90166	.29	.00	.00	59.32	.39	.24	.24	5.19	14.99	5.43	15.23	.00	5.43
90167	.28	.00	.00	59.54	.41	.25	.25	5.31	15.19	5.56	15.44	.00	5.56
90169	.02	.00	.00	59.86	.40	.26	.26	5.44	15.60	5.70	15.86	.00	5.70
90176	.13	.00	.00	60.76	.37	.30	.30	5.71	17.05	6.01	17.35	.00	6.01
90178	.01	.00	.00	61.56	.36	.31	.31	5.76	17.47	6.07	17.78	.00	6.07
90179	.02	.00	.00	61.81	.35	.32	.32	5.81	17.69	6.12	18.00	.00	6.12
90183	.18	.00	.00	62.18	.34	.34	.34	6.01	18.53	6.34	18.87	.00	6.34
90184	.01	.00	.00	62.52	.34	.34	.34	6.03	18.75	6.38	19.09	.00	6.38
90188	.05	.00	.00	62.82	.33	.36	.37	6.13	19.60	6.49	19.97	.00	6.49
90193	.01	.00	.00	63.26	.32	.38	.39	6.21	20.67	6.59	21.06	.00	6.59
90201	.01	.00	.00	63.69	.30	.40	.44	6.28	22.37	6.68	22.81	.00	6.68
90205	.02	.00	.00	63.87	.30	.40	.46	6.30	23.22	6.70	23.68	.00	6.70
90207	.28	.00	.00	63.87	.31	.41	.47	6.51	23.64	6.92	24.11	.00	6.92
90208	.01	.00	.00	63.85	.31	.41	.48	6.53	23.85	6.94	24.32	.00	6.94
90209	.01	.00	.00	63.83	.31	.41	.48	6.55	24.05	6.96	24.54	.00	6.96
90211	.02	.00	.00	63.79	.30	.41	.49	6.58	24.47	6.99	24.96	.00	6.99
90212	.55	.03	.00	63.73	.36	.42	.50	6.79	24.67	7.21	25.17	.00	7.21
90223	.45	.01	.00	63.33	.34	.47	.56	7.16	26.87	7.63	27.43	.00	7.63
90229	.08	.00	.00	62.46	.34	.50	.59	7.34	28.02	7.84	28.60	.00	7.84
90230	.35	.00	.00	61.97	.36	.51	.59	7.52	28.20	8.03	28.79	.00	8.03
90231	.24	.00	.00	61.82	.37	.51	.60	7.71	28.39	8.22	28.98	.00	8.22
90232	.11	.00	.00	61.66	.37	.51	.60	7.80	28.57	8.31	29.17	.00	8.31
90233	.03	.00	.00	61.50	.37	.52	.61	7.87	28.75	8.39	29.36	.00	8.39
90234	.07	.00	.00	61.33	.37	.52	.61	7.93	28.93	8.45	29.54	.00	8.45
90235	.12	.00	.00	61.15	.37	.53	.61	8.02	29.11	8.55	29.73	.00	8.55
90236	.02	.00	.00	60.97	.36	.53	.62	8.08	29.29	8.62	29.91	.00	8.62
90237	.35	.01	.00	60.79	.39	.54	.62	8.24	29.47	8.77	30.09	.00	8.77
90238	.11	.00	.00	60.59	.39	.54	.63	8.37	29.64	8.91	30.27	.00	8.91
90239	.06	.00	.00	60.40	.37	.55	.63	8.51	29.81	9.06	30.45	.00	9.06
90243	.01	.00	.00	59.88	.35	.57	.65	8.68	30.49	9.24	31.14	.00	9.24
90246	.01	.00	.00	59.11	.34	.58	.66	8.76	30.98	9.34	31.65	.00	9.34
90247	.07	.00	.00	58.64	.33	.58	.67	8.82	31.14	9.40	31.81	.00	9.40
90248	.09	.00	.00	58.40	.33	.59	.67	8.89	31.30	9.48	31.97	.00	9.48
90251	.20	.00	.00	57.90	.33	.60	.68	9.09	31.77	9.69	32.45	.00	9.69
90253	.08	.00	.00	57.26	.33	.60	.69	9.18	32.07	9.78	32.76	.00	9.78
90269	.01	.00	.00	54.69	.31	.64	.75	9.34	34.23	9.97	34.98	.00	9.97
90270	.04	.00	.00	52.07	.30	.64	.75	9.37	34.35	10.01	35.10	.00	10.01
90275	.05	.00	.00	51.08	.30	.65	.75	9.41	34.92	10.05	35.67	.00	10.05
90276	.02	.00	.00	50.08	.30	.65	.75	9.42	35.03	10.07	35.78	.00	10.07
90277	.02	.00	.00	49.74	.30	.65	.75	9.44	35.14	10.09	35.89	.00	10.09
90278	.03	.00	.00	49.39	.30	.65	.75	9.46	35.24	10.11	35.99	.00	10.11
90279	.01	.00	.00	49.05	.30	.65	.75	9.49	35.35	10.13	36.10	.00	10.13
90289	.12	.00	.00	47.12	.30	.66	.75	9.57	36.29	10.23	37.04	.00	10.23
90292	.03	.00	.00	44.80	.30	.66	.75	9.62	36.54	10.28	37.30	.00	10.28
90305	.02	.00	.00	41.91	.30	.66	.75	9.65	37.48	10.31	38.23	.00	10.31
90308	.07	.00	.00	39.03	.30	.67	.75	9.70	37.67	10.37	38.42	.00	10.37
90309	.24	.00	.00	38.32	.33	.67	.75	9.76	37.73	10.43	38.48	.00	10.43
90310	.02	.00	.00	37.97	.33	.67	.75	9.78	37.78	10.45	38.54	.00	10.45
90318	.25	.00	.00	36.40	.33	.67	.75	9.91	38.20	10.57	38.96	.00	10.57
90319	.03	.00	.00	34.86	.35	.67	.75	9.93	38.25	10.60	39.00	.00	10.60
90324	.12	.00	.00	33.87	.35	.67	.75	10.03	38.48	10.70	39.23	.00	10.70

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	= 13.380 IN
PRECIP., NET	= 13.380 IN
PREDICTED RUNOFF	= 1.588 IN
DEEP PERCOLATION	= .747 IN
ACTUAL PLANT EVAP	= .666 IN
ACTUAL SOIL EVAP	= 10.378 IN
TOTAL ET	= 11.044 IN
TOTAL INTERCEPTION=	.000 IN
TOTAL INT PLUS ET	= 11.044 IN
BEGIN SOIL WATER	= .000 IN
FINAL SOIL WATER	= .000 IN
IRRIGATION APPLIED=	.000 IN

WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.03	.00	25.55	.31	.00	.00	.07	3.27	.07	3.27	.00	.07		
91084	.06	.00	.00	32.55	.31	.00	.00	.13	3.34	.13	3.34	.00	.13		
91085	.29	.10	.00	32.87	.33	.00	.00	.20	3.42	.20	3.42	.00	.20		
91086	.17	.05	.00	33.19	.33	.00	.00	.28	3.50	.28	3.50	.00	.28		
91087	.15	.04	.00	33.51	.34	.00	.00	.36	3.58	.36	3.58	.00	.36		
91088	.19	.06	.00	33.84	.35	.00	.00	.44	3.66	.44	3.66	.00	.44		
91089	.22	.08	.00	34.17	.36	.00	.00	.52	3.74	.52	3.74	.00	.52		
91090	.25	.10	.00	34.50	.37	.00	.00	.60	3.82	.61	3.82	.00	.61		
91091	.28	.13	.00	34.83	.38	.00	.00	.69	3.91	.69	3.91	.00	.69		
91092	.02	.00	.00	35.17	.38	.00	.00	.71	3.99	.71	3.99	.00	.71		
91093	.02	.00	.00	35.51	.38	.00	.00	.72	4.08	.73	4.08	.00	.73		
91094	.05	.00	.00	35.85	.38	.00	.00	.76	4.17	.77	4.17	.00	.77		
91096	.21	.08	.00	36.36	.39	.00	.00	.86	4.35	.87	4.36	.00	.87		
91100	.02	.00	.00	37.41	.38	.01	.01	.91	4.74	.91	4.75	.00	.91		
91102	.01	.00	.00	38.46	.38	.01	.01	.93	4.94	.94	4.95	.00	.94		
91105	.05	.00	.00	39.35	.38	.01	.01	.99	5.26	1.00	5.28	.00	1.00		
91106	.05	.00	.00	40.07	.38	.01	.01	1.03	5.37	1.04	5.39	.00	1.04		
91107	.10	.00	.00	40.43	.38	.02	.02	1.11	5.48	1.12	5.50	.00	1.12		
91108	.03	.00	.00	40.79	.38	.02	.02	1.13	5.59	1.15	5.61	.00	1.15		
91109	.03	.00	.00	41.15	.38	.02	.02	1.16	5.71	1.18	5.73	.00	1.18		
91116	.01	.00	.00	42.59	.38	.04	.04	1.21	6.56	1.25	6.59	.00	1.25		
91119	.05	.00	.00	44.40	.37	.04	.04	1.27	6.95	1.31	6.99	.00	1.31		
91120	.09	.00	.00	45.12	.37	.05	.05	1.34	7.08	1.39	7.13	.00	1.39		
91121	.01	.00	.00	45.48	.37	.05	.05	1.36	7.22	1.41	7.27	.00	1.41		
91123	.02	.00	.00	46.02	.37	.06	.06	1.38	7.49	1.44	7.55	.00	1.44		
91128	.12	.00	.00	47.26	.37	.07	.07	1.51	8.22	1.58	8.29	.00	1.58		
91129	.22	.00	.00	48.32	.38	.08	.08	1.66	8.37	1.74	8.44	.00	1.74		
91130	.25	.00	.00	48.67	.39	.08	.08	1.81	8.52	1.89	8.60	.00	1.89		
91131	.37	.03	.00	49.02	.42	.09	.09	1.96	8.67	2.05	8.76	.00	2.05		
91132	.01	.00	.00	49.36	.42	.09	.09	1.99	8.82	2.08	8.92	.00	2.08		
91134	.21	.00	.00	49.87	.42	.10	.10	2.16	9.14	2.26	9.24	.00	2.26		
91137	.16	.00	.00	50.72	.42	.11	.11	2.31	9.62	2.42	9.74	.00	2.42		
91138	.55	.11	.12	51.39	.45	.12	.12	2.47	9.79	2.59	9.91	.00	2.59		
91139	.38	.04	.17	51.72	.45	.12	.12	2.64	9.95	2.76	10.08	.00	2.76		
91140	.02	.00	.00	52.04	.44	.13	.13	2.69	10.12	2.82	10.25	.00	2.82		
91141	.01	.00	.00	52.37	.44	.13	.13	2.73	10.29	2.86	10.42	.00	2.86		
91145	.25	.00	.00	53.16	.43	.15	.15	2.98	10.99	3.13	11.14	.00	3.13		
91147	.28	.00	.00	54.09	.44	.16	.16	3.19	11.34	3.35	11.50	.00	3.35		
91148	.01	.00	.00	54.55	.44	.17	.17	3.23	11.52	3.40	11.69	.00	3.40		
91149	.02	.00	.00	54.85	.43	.17	.17	3.28	11.71	3.46	11.88	.00	3.46		
91150	.12	.00	.00	55.14	.44	.18	.18	3.38	11.89	3.56	12.06	.00	3.56		
91151	.03	.00	.00	55.44	.43	.18	.18	3.44	12.07	3.62	12.25	.00	3.62		
91154	.03	.00	.00	56.01	.42	.20	.20	3.52	12.63	3.71	12.83	.00	3.71		
91155	.12	.00	.00	56.56	.42	.20	.20	3.61	12.82	3.82	13.03	.00	3.82		
91156	.57	.09	.13	56.84	.45	.21	.21	3.79	13.02	4.00	13.22	.00	4.00		
91157	.15	.00	.00	57.10	.45	.21	.21	3.96	13.21	4.17	13.42	.00	4.17		
91158	.12	.00	.00	57.37	.44	.22	.22	4.11	13.40	4.33	13.62	.00	4.33		
91159	.01	.00	.00	57.63	.43	.22	.22	4.20	13.60	4.42	13.82	.00	4.42		
91171	.91	.16	.03	59.17	.39	.29	.29	4.71	16.01	5.00	16.30	.00	5.00		
91173	.03	.00	.00	60.67	.42	.30	.30	4.93	16.43	5.23	16.73	.00	5.23		
91174	.02	.00	.00	60.95	.41	.31	.31	4.99	16.64	5.30	16.94	.00	5.30		
91175	.02	.00	.00	61.14	.40	.31	.31	5.05	16.84	5.36	17.16	.00	5.36		
91176	.03	.00	.00	61.31	.40	.32	.32	5.11	17.05	5.43	17.37	.00	5.43		
91177	.01	.00	.00	61.48	.39	.33	.33	5.15	17.26	5.47	17.59	.00	5.47		
91179	.11	.00	.00	61.73	.39	.34	.34	5.26	17.69	5.60	18.02	.00	5.60		
91181	.05	.00	.00	62.03	.38	.35	.35	5.32	18.11	5.67	18.46	.00	5.67		
91182	.02	.00	.00	62.25	.38	.35	.35	5.37	18.32	5.72	18.68	.00	5.72		
91191	.10	.00	.00	62.86	.36	.41	.41	5.60	20.24	6.01	20.65	.00	6.01		
91195	.03	.00	.00	63.46	.34	.43	.43	5.68	21.10	6.11	21.53	.00	6.11		
91206	.22	.00	.00	63.80	.32	.47	.50	5.99	23.43	6.46	23.92	.00	6.46		
91207	.12	.00	.00	63.87	.32	.48	.50	6.09	23.64	6.56	24.14	.00	6.56		
91213	.29	.00	.00	63.78	.31	.49	.54	6.36	24.88	6.85	25.41	.00	6.85		
91214	.02	.00	.00	63.63	.32	.49	.54	6.37	25.08	6.87	25.62	.00	6.87		
91218	.06	.00	.00	63.47	.31	.50	.56	6.46	25.89	6.97	26.45	.00	6.97		
91235	.09	.00	.00	62.33	.30	.52	.65	6.59	29.11	7.11	29.77	.00	7.11		

91239	.28	.00	.00	60.69	.30	.53	.67	6.77	29.81	7.30	30.49	.00	7.30
91240	.61	.06	.00	60.20	.38	.53	.68	6.94	29.99	7.48	30.66	.00	7.48
91251	.24	.00	.00	58.86	.36	.58	.73	7.29	31.77	7.88	32.49	.00	7.88
91252	.03	.00	.00	57.39	.35	.59	.73	7.32	31.92	7.90	32.65	.00	7.90
91254	.84	.20	.00	56.99	.39	.60	.74	7.48	32.22	8.08	32.96	.00	8.08
91256	.01	.00	.00	56.45	.41	.60	.75	7.67	32.51	8.28	33.26	.00	8.28
91257	.19	.00	.00	56.03	.41	.61	.75	7.78	32.65	8.39	33.40	.00	8.39
91272	.11	.00	.00	53.63	.36	.65	.80	8.30	34.58	8.95	35.38	.00	8.95
91277	.10	.00	.00	50.41	.33	.65	.80	8.44	35.14	9.10	35.93	.00	9.10
91290	.06	.00	.00	47.29	.31	.65	.80	8.66	36.38	9.31	37.18	.00	9.31
91291	.01	.00	.00	44.80	.30	.65	.80	8.68	36.46	9.34	37.26	.00	9.34
91295	.12	.00	.00	43.89	.30	.66	.80	8.76	36.78	9.42	37.58	.00	9.42
91298	.01	.00	.00	42.63	.30	.66	.80	8.81	37.01	9.46	37.81	.00	9.46
91299	.18	.00	.00	41.90	.32	.66	.80	8.88	37.08	9.54	37.88	.00	9.54
91300	.28	.00	.00	41.54	.35	.66	.80	8.95	37.15	9.61	37.95	.00	9.61
91301	.06	.00	.00	41.18	.36	.66	.80	9.00	37.22	9.65	38.02	.00	9.65
91302	.01	.00	.00	40.82	.35	.66	.80	9.03	37.29	9.69	38.09	.00	9.69
91304	.24	.00	.00	40.28	.36	.66	.80	9.11	37.42	9.77	38.22	.00	9.77
91305	.12	.00	.00	39.74	.39	.66	.80	9.18	37.48	9.84	38.28	.00	9.84
91309	.18	.00	.00	38.85	.38	.66	.80	9.34	37.73	10.00	38.52	.00	10.00
91310	.14	.00	.00	37.97	.40	.66	.80	9.40	37.78	10.05	38.58	.00	10.05
91313	.09	.00	.00	37.26	.39	.66	.80	9.56	37.95	10.21	38.75	.00	10.21
91316	.04	.00	.00	36.22	.38	.66	.80	9.69	38.11	10.35	38.90	.00	10.35
91317	.06	.00	.00	35.54	.38	.66	.80	9.74	38.16	10.39	38.95	.00	10.39
91322	.07	.00	.00	34.53	.37	.66	.80	9.89	38.39	10.55	39.19	.00	10.55
91323	.04	.00	.00	33.54	.37	.66	.80	9.93	38.43	10.58	39.23	.00	10.58
91324	.12	.00	.00	33.22	.38	.66	.80	9.97	38.48	10.63	39.28	.00	10.63
91325	.09	.00	.00	32.90	.39	.66	.80	10.01	38.52	10.67	39.32	.00	10.67
91326	.01	.00	.00	32.58	.38	.66	.80	10.05	38.56	10.71	39.36	.00	10.71

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	1.372 IN
DEEP PERCOLATION	=	.439 IN
ACTUAL PLANT EVAP	=	.657 IN
ACTUAL SOIL EVAP	=	10.542 IN
TOTAL ET	=	11.200 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	11.200 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	1.692
DEEP PERCOLATION	=	.417
TOTAL ET	=	10.929
IRRIGATION APPLIED	=	.000
AVG. AVAL. STORAGE	=	1.437 IN
FINAL AVAL. STORAGE	=	1.800 IN

FINAL STORAGE FOR EACH FRACTION

.000 .000 .000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

OPPORTUNITY CONTROL SIMULATION

1989-1991

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.440	.000	2.345	.000
FEB	.000	.000	.000	.325	.000	1.902	.000
MAR	1.245	1.245	.362	.505	.000	1.844	.000
APR	3.735	3.735	1.562	2.016	.066	2.401	.000
MAY	1.480	1.480	.016	1.551	.000	2.089	.000
JUN	.920	.920	.000	1.281	.000	1.960	.000
JUL	1.070	1.070	.000	.940	.000	1.832	.000
AUG	2.180	2.180	.176	1.697	.000	2.021	.000
SEP	.300	.300	.000	.757	.000	1.946	.000
OCT	.860	.860	.000	.755	.000	1.851	.000
NOV	.170	.170	.000	.275	.000	1.821	.000
DEC	.000	.000	.000	.000	.000	1.800	.000
TOT	11.960	11.960	2.116	10.543	.066	1.984	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	1.800	.000
FEB	.000	.000	.000	.000	.000	1.800	.000
MAR	1.115	1.115	.277	.550	.000	1.828	.000
APR	2.875	2.875	.851	1.262	.169	2.450	.000
MAY	3.500	3.500	.404	2.500	.578	2.600	.000
JUN	1.210	1.210	.000	1.858	.000	2.289	.000
JUL	1.150	1.150	.031	1.035	.000	1.888	.000
AUG	2.000	2.000	.026	2.036	.000	2.111	.000
SEP	.500	.500	.000	.773	.000	1.885	.000
OCT	.280	.280	.000	.280	.000	1.805	.000
NOV	.750	.750	.000	.543	.000	2.010	.000
DEC	.000	.000	.000	.207	.000	1.858	.000
TOT	13.380	13.380	1.588	11.044	.747	2.027	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	1.800	.000
FEB	.000	.000	.000	.000	.000	1.800	.000
MAR	1.475	1.475	.453	.606	.000	1.857	.000
APR	1.025	1.025	.212	.781	.000	2.282	.000
MAY	3.040	3.040	.191	2.236	.283	2.475	.000
JUN	2.180	2.180	.252	2.051	.155	2.431	.000
JUL	.490	.490	.000	.966	.000	1.996	.000
AUG	1.350	1.350	.062	.922	.000	1.879	.000
SEP	1.420	1.420	.202	1.407	.000	2.174	.000
OCT	1.070	1.070	.000	.804	.000	1.915	.000
NOV	.960	.960	.000	1.142	.000	2.247	.000
DEC	.000	.000	.000	.286	.000	1.878	.000
TOT	13.010	13.010	1.372	11.200	.439	2.061	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.147	.000	1.982	.000
FEB	.000	.000	.000	.108	.000	1.834	.000
MAR	1.278	1.278	.364	.554	.000	1.843	.000
APR	2.545	2.545	.875	1.353	.078	2.378	.000
MAY	2.673	2.673	.204	2.095	.287	2.388	.000
JUN	1.437	1.437	.084	1.730	.052	2.226	.000
JUL	.903	.903	.010	.980	.000	1.905	.000
AUG	1.843	1.843	.088	1.552	.000	2.004	.000
SEP	.740	.740	.067	.979	.000	2.002	.000
OCT	.737	.737	.000	.613	.000	1.857	.000
NOV	.627	.627	.000	.653	.000	2.026	.000
DEC	.000	.000	.000	.165	.000	1.846	.000
TOT	12.783	12.783	1.692	10.929	.417	2.024	.000

****
SNOW NOTICE
****
DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf08ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

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CARD   1:SILVER BOW CREEK RI/FS
CARD   2:OPPORTUNITY CONTROL PLOT
CARD   3:1989-1991
CARD   4:      .89      91       2       1       0
CARD   5:     .150     .300    .550 100.0002000.000
CARD   6:        2   22.960
CARD   7:1400.000     .0151450.000     .300
CARD   8:        1    1.000    .260
CARD  14:        3
CARD  15:        1        0       0       0       0       0       0       0       0       0
CARD  15:        1        0       0       0       0       0       0       0       0       0
CARD  15:        1        0       0       0       0       0       0       0       0       0
CARD  16:        1    1.000
CARD  17:    1.000
CARD  18:    1.000
CARD  19:     .015
CARD  17:    1.000
CARD  18:    1.000
CARD  19:     .015
CARD  17:    1.000
CARD  18:    1.000
CARD  19:     .015
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G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
OPPORTUNITY CONTROL PLOT
1989-1991

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.04
2	.010	2.65	.07
3	.030	1.80	.23
4	.300	1.60	.42
5	.200	2.65	.24

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600	ACRES
SLOPE LENGTH	1450.00	FT
AVERAGE SLOPE	.0199	

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.260

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .36 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.55 TONS/ACRE
ENRICHMENT RATIO 1.023

MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED 1.56 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 9.47 TONS/ACRE
ENRICHMENT RATIO 1.001

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
1 STORMS PRODUCED .02 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .06 TONS/ACRE
ENRICHMENT RATIO 1.160

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
2 STORMS PRODUCED .18 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .88 TONS/ACRE
ENRICHMENT RATIO 1.090

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
16 STORMS PRODUCED 2.12 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 11.96 TONS/ACRE
ENRICHMENT RATIO 1.011

MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
6 STORMS PRODUCED .28 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.13 TONS/ACRE
ENRICHMENT RATIO 1.029

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
5 STORMS PRODUCED .85 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 4.80 TONS/ACRE
ENRICHMENT RATIO 1.010

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
2 STORMS PRODUCED .40 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 2.69 TONS/ACRE
ENRICHMENT RATIO 1.015

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
1 STORMS PRODUCED .03 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .12 TONS/ACRE
ENRICHMENT RATIO 1.160

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
2 STORMS PRODUCED .03 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .10 TONS/ACRE
ENRICHMENT RATIO 1.162

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
16 STORMS PRODUCED 1.59 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 8.83 TONS/ACRE
ENRICHMENT RATIO 1.018

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR FEB, 1991

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0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .45 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.97 TONS/ACRE
ENRICHMENT RATIO 1.023

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .21 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.02 TONS/ACRE
ENRICHMENT RATIO 1.011

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
3 STORMS PRODUCED .19 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .90 TONS/ACRE
ENRICHMENT RATIO 1.079

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
2 STORMS PRODUCED .25 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.39 TONS/ACRE
ENRICHMENT RATIO 1.077

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR JUL, 1991

OPPORTUNITY

GLEAMS HYDROLOGY/EROSION OUTPUT

RF09

HYDROLOGY INPUT PARAMETER FILENAME: rf09.par

G L E A M S 2.01 HYDROLOGY OUTPUT

SILVER BOW CREEK
OPPORTUNITY DEEP-TILL SIMULATION
1989-1991

MONTHLY MEAN MINIMUM TEMPERATURES, DEGREES FAHRENHEIT

11.42	12.53	18.15	26.76	36.06	43.56
47.25	46.13	40.52	31.90	22.60	15.10

MONTHLY MEAN MAXIMUM TEMPERATURES, DEGREES FAHRENHEIT

32.28	34.32	42.24	53.91	66.21	75.84
80.22	78.18	70.26	58.59	46.29	36.66

MONTHLY MEAN RADIATION, LANGLEYS PER DAY

133.90	189.78	285.91	396.53	492.01	546.75
546.10	490.22	394.09	283.47	187.99	133.25

NO. DAYS OF FROZEN SOIL DURING SNOWMELT: 15

LEAF AREA INDEX TABLE

IRFLG	YEAR	DATE	LAI
0	1	70	.00
0	1	99	2.00
0	1	129	2.80
0	1	277	2.80
0	1	306	1.80
0	1	336	.90
0	1	366	.00
0	2	70	.00
0	2	99	2.00
0	2	129	2.80
0	2	277	2.80
0	2	306	1.80
0	2	336	.90
0	2	366	.00
0	3	70	.00
0	3	99	2.00
0	3	129	2.80
0	3	277	2.80
0	3	306	1.80
0	3	336	.90
0	3	366	.00

FIELD AREA	=	22.960	ACRES
ROOTING DEPTH	=	60.000	IN
SATURATED CONDUCTIVITY	=	.500	IN/HR
AVG. FUL	=	.550	
AVG. FIELD CAPACITY	=	.450	IN/IN
INITIAL STORAGE FRACTION	=	.850	
EVAPORATION COEFFICIENT	=	3.300	
AVERAGE POROSITY	=	.600	CC/CC
SCS CURVE NUMBER	=	65.000	
CHANNEL SLOPE	=	.015	FT/FT
WATERSHED LEN/WIDTH RATIO	=	2.000	
PEAK FLOW RATE COEFFICIENT	=	34.276	
PEAK FLOW RATE EXPONENT	=	.868	
UPPER LIMIT OF STORAGE	=	20.400	IN
AVG. 15-BAR WATER CONTENT	=	.260	IN/IN
INITIAL SOIL WATER STORAGE	=	9.690	IN
FRAC. P.A.W. TO BEGIN IRR.	=	.000	
FRAC. P.A.W. TO END IRR.	=	.000	

UPPER LIMIT OF STORAGES, IN

.118	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	2.400	7.200

INITIAL PLANT AVAILABLE STORAGE, IN

.050	.504	.504	.504	.504	.504	.504	.504	.504	.504	1.275	3.825

POROSITY BY LAYER (CC/CC)

.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600	.600

FUL BY LAYER (IN/IN)

.500	.500	.500	.500	.500	.500	.500	.500	.500	.500	.625	.625

FEILD CAPACITY BY LAYER (IN/IN)

.450	.450	.450	.450	.450	.450	.450	.450	.450	.450	.450	.450

FIELD CAPACITY BY LAYER (IN)

.177	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	1.780	2.700	8.100

15-BAR WATER CONTENT BY LAYER (IN/IN)

.300	.300	.300	.300	.300	.300	.300	.300	.300	.300	.200	.200

WATER CONTENT AT WILT. PT. BY LAYER (IN)

.118	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.187	1.200	3.600

FOREST COVER = NONE

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
89083	.02	.00	.00	24.57	.41	.16	.16	1.16	1.82	1.31	1.97	.00	1.31		
89084	.05	.00	.00	32.55	.40	.19	.19	1.20	1.86	1.38	2.04	.00	1.38		
89085	.17	.02	.00	32.87	.40	.21	.21	1.24	1.90	1.45	2.11	.00	1.45		
89086	.12	.01	.00	33.19	.40	.25	.25	1.28	1.94	1.53	2.19	.00	1.53		
89087	.20	.04	.00	33.51	.40	.28	.28	1.33	1.99	1.61	2.27	.00	1.61		
89088	.19	.03	.00	33.84	.40	.32	.32	1.37	2.03	1.69	2.35	.00	1.69		
89089	.23	.05	.00	34.17	.41	.36	.36	1.42	2.09	1.78	2.44	.00	1.78		
89090	.26	.06	.00	34.50	.41	.40	.40	1.47	2.14	1.87	2.54	.00	1.87		
89091	.28	.07	.00	34.83	.41	.45	.45	1.52	2.19	1.97	2.64	.00	1.97		
89092	.37	.12	.00	35.17	.41	.49	.49	1.57	2.24	2.06	2.74	.00	2.06		
89093	.36	.12	.00	35.51	.41	.55	.55	1.62	2.30	2.16	2.84	.00	2.16		
89094	.38	.13	.00	35.85	.42	.60	.60	1.66	2.35	2.26	2.95	.00	2.26		
89095	.42	.16	.00	36.19	.42	.66	.66	1.70	2.40	2.36	3.06	.00	2.36		
89096	.45	.18	.00	36.54	.42	.72	.72	1.74	2.45	2.47	3.17	.00	2.47		
89097	.49	.21	.00	36.88	.43	.79	.79	1.78	2.50	2.57	3.28	.00	2.57		
89098	.05	.00	.00	37.23	.42	.85	.85	1.82	2.55	2.68	3.40	.00	2.68		
89099	.05	.00	.00	37.58	.42	.93	.93	1.86	2.60	2.79	3.52	.00	2.79		
89100	.01	.00	.00	37.93	.42	1.00	1.00	1.89	2.64	2.90	3.65	.00	2.90		
89106	.05	.00	.00	39.17	.42	1.49	1.49	2.10	2.94	3.59	4.44	.00	3.59		
89107	.15	.00	.00	40.43	.41	1.59	1.59	2.13	3.00	3.72	4.58	.00	3.72		
89111	.01	.00	.00	41.33	.41	1.97	1.97	2.26	3.20	4.23	5.18	.00	4.23		
89112	.10	.00	.00	42.23	.40	2.08	2.08	2.28	3.25	4.36	5.33	.00	4.36		
89113	.18	.00	.00	42.59	.40	2.18	2.18	2.31	3.30	4.50	5.49	.00	4.50		
89114	.13	.00	.00	42.96	.40	2.29	2.29	2.34	3.36	4.63	5.65	.00	4.63		
89115	.03	.00	.00	43.32	.40	2.41	2.41	2.37	3.41	4.77	5.82	.00	4.77		
89117	.19	.00	.00	43.86	.40	2.64	2.64	2.42	3.52	5.06	6.15	.00	5.06		
89118	.02	.00	.00	44.40	.40	2.76	2.76	2.44	3.57	5.20	6.33	.00	5.20		
89119	.01	.00	.00	44.76	.40	2.88	2.88	2.46	3.62	5.35	6.50	.00	5.35		
89122	.02	.00	.00	45.48	.39	3.27	3.27	2.53	3.78	5.80	7.05	.00	5.80		
89127	.02	.00	.00	46.91	.38	3.98	3.98	2.61	4.05	6.59	8.03	.00	6.59		
89128	.06	.00	.00	47.97	.37	4.13	4.13	2.62	4.11	6.76	8.24	.00	6.76		
89129	.02	.00	.00	48.32	.37	4.29	4.29	2.63	4.16	6.92	8.45	.00	6.92		
89130	.01	.00	.00	48.67	.37	4.45	4.45	2.64	4.21	7.09	8.66	.00	7.09		
89131	.15	.00	.00	49.02	.37	4.60	4.60	2.66	4.27	7.26	8.88	.00	7.26		
89132	.01	.00	.00	49.36	.37	4.76	4.76	2.67	4.33	7.43	9.09	.00	7.43		
89133	.10	.00	.00	49.70	.36	4.93	4.93	2.68	4.38	7.61	9.31	.00	7.61		
89134	.01	.00	.00	50.04	.36	5.09	5.09	2.69	4.44	7.78	9.53	.00	7.78		
89135	.13	.00	.00	50.38	.36	5.26	5.26	2.70	4.50	7.96	9.76	.00	7.96		
89136	.01	.00	.00	50.72	.36	5.42	5.42	2.71	4.56	8.14	9.98	.00	8.14		
89138	.17	.00	.00	51.22	.35	5.76	5.76	2.74	4.68	8.50	10.44	.00	8.50		
89139	.01	.00	.00	51.72	.35	5.94	5.94	2.75	4.74	8.69	10.67	.00	8.69		
89143	.01	.00	.00	52.53	.34	6.64	6.64	2.80	4.98	9.45	11.63	.00	9.45		
89144	.04	.00	.00	53.32	.34	6.82	6.82	2.82	5.05	9.64	11.87	.00	9.64		
89145	.01	.00	.00	53.63	.33	7.01	7.01	2.83	5.11	9.83	12.12	.00	9.83		

89148	.50	.00	.00	54.25	.33	7.56	7.56	2.87	5.31	10.43	12.87	.00	10.43
89149	.20	.00	.00	54.85	.33	7.75	7.75	2.88	5.37	10.63	13.12	.00	10.63
89153	.01	.00	.00	55.58	.32	8.52	8.52	2.94	5.64	11.46	14.16	.00	11.46
89154	.02	.00	.00	56.29	.32	8.71	8.71	2.95	5.71	11.67	14.42	.00	11.67
89161	.17	.00	.00	57.36	.30	10.00	10.12	3.05	6.20	13.06	16.31	.00	13.06
89166	.25	.00	.00	58.85	.29	10.68	11.15	3.13	6.56	13.81	17.71	.00	13.81
89167	.31	.00	.00	59.54	.29	10.82	11.36	3.15	6.64	13.96	18.00	.00	13.96
89168	.01	.00	.00	59.76	.29	10.95	11.57	3.16	6.71	14.11	18.28	.00	14.11
89171	.09	.00	.00	60.17	.28	11.29	12.21	3.21	6.93	14.50	19.14	.00	14.50
89175	.03	.00	.00	60.86	.28	11.64	13.07	3.27	7.23	14.91	20.31	.00	14.91
89178	.03	.00	.00	61.48	.27	11.84	13.73	3.32	7.46	15.16	21.19	.00	15.16
89193	.03	.00	.00	62.71	.27	12.25	17.04	3.55	8.62	15.80	25.66	.00	15.80
89194	.12	.00	.00	63.50	.26	12.26	17.26	3.57	8.70	15.83	25.96	.00	15.83
89197	.06	.00	.00	63.62	.26	12.30	17.92	3.61	8.93	15.92	26.85	.00	15.92
89198	.09	.00	.00	63.73	.26	12.32	18.16	3.63	9.01	15.95	27.15	.00	15.95
89203	.12	.00	.00	63.82	.26	12.39	19.24	3.71	9.39	16.10	28.63	.00	16.10
89204	.02	.00	.00	63.88	.26	12.41	19.46	3.72	9.47	16.13	28.93	.00	16.13
89205	.12	.00	.00	63.88	.26	12.43	19.68	3.74	9.54	16.17	29.22	.00	16.17
89208	.35	.00	.00	63.87	.26	12.51	20.33	3.78	9.77	16.29	30.10	.00	16.29
89209	.07	.00	.00	63.83	.27	12.55	20.54	3.80	9.85	16.35	30.39	.00	16.35
89211	.07	.00	.00	63.79	.27	12.63	20.97	3.83	10.00	16.46	30.97	.00	16.46
89212	.02	.00	.00	63.73	.27	12.66	21.18	3.85	10.07	16.51	31.26	.00	16.51
89213	.10	.00	.00	63.68	.27	12.70	21.40	3.86	10.15	16.56	31.54	.00	16.56
89220	.08	.00	.00	63.42	.27	12.88	22.85	3.97	10.66	16.85	33.51	.00	16.85
89221	.12	.00	.00	63.09	.27	12.91	23.06	3.98	10.73	16.89	33.79	.00	16.89
89223	.20	.00	.00	62.94	.27	12.97	23.46	4.01	10.87	16.98	34.33	.00	16.98
89224	.03	.00	.00	62.77	.27	13.01	23.66	4.03	10.94	17.03	34.60	.00	17.03
89225	.03	.00	.00	62.65	.27	13.04	23.86	4.04	11.01	17.08	34.87	.00	17.08
89230	.02	.00	.00	62.26	.26	13.16	24.84	4.11	11.35	17.27	36.19	.00	17.27
89231	.01	.00	.00	61.82	.26	13.17	25.03	4.13	11.42	17.30	36.45	.00	17.30
89232	.05	.00	.00	61.66	.26	13.19	25.22	4.14	11.49	17.33	36.71	.00	17.33
89233	.02	.00	.00	61.50	.26	13.21	25.41	4.15	11.55	17.36	36.96	.00	17.36
89235	.80	.00	.00	61.24	.27	13.29	25.78	4.18	11.68	17.47	37.47	.00	17.47
89236	.45	.00	.00	60.97	.28	13.38	25.97	4.19	11.75	17.57	37.71	.00	17.57
89237	.06	.00	.00	60.79	.28	13.47	26.15	4.21	11.81	17.67	37.96	.00	17.67
89238	.01	.00	.00	60.59	.28	13.55	26.33	4.22	11.87	17.77	38.20	.00	17.77
89239	.08	.00	.00	60.40	.28	13.63	26.51	4.23	11.94	17.86	38.45	.00	17.86
89240	.02	.00	.00	60.20	.28	13.70	26.69	4.25	12.00	17.95	38.69	.00	17.95
89241	.01	.00	.00	59.99	.28	13.77	26.86	4.26	12.06	18.03	38.92	.00	18.03
89242	.01	.00	.00	59.78	.28	13.83	27.04	4.27	12.12	18.10	39.16	.00	18.10
89243	.08	.00	.00	59.56	.28	13.89	27.21	4.28	12.18	18.18	39.39	.00	18.18
89245	.01	.00	.00	59.22	.27	14.00	27.55	4.31	12.30	18.31	39.85	.00	18.31
89252	.03	.00	.00	58.15	.27	14.27	28.69	4.39	12.70	18.66	41.39	.00	18.66
89253	.02	.00	.00	57.13	.27	14.30	28.85	4.40	12.75	18.70	41.60	.00	18.70
89260	.12	.00	.00	56.03	.27	14.40	29.88	4.48	13.12	18.92	43.00	.00	18.92
89262	.12	.00	.00	54.73	.27	14.48	30.16	4.50	13.21	18.98	43.38	.00	18.98
89274	.22	.00	.00	52.54	.26	14.61	31.21	4.61	13.75	19.22	44.95	.00	19.22
89275	.10	.00	.00	50.42	.27	14.61	31.21	4.62	13.79	19.23	44.99	.00	19.23
89276	.01	.00	.00	50.08	.27	14.61	31.21	4.62	13.83	19.23	45.03	.00	19.23
89277	.10	.00	.00	49.74	.27	14.61	31.21	4.63	13.87	19.24	45.07	.00	19.24
89279	.05	.00	.00	49.22	.27	14.61	31.21	4.65	13.94	19.26	45.15	.00	19.26
89284	.02	.00	.00	48.00	.27	14.61	31.21	4.72	14.13	19.33	45.34	.00	19.33
89285	.02	.00	.00	46.95	.27	14.61	31.21	4.76	14.17	19.35	45.38	.00	19.35
89297	.02	.00	.00	44.61	.27	14.61	31.21	4.93	14.61	19.54	45.82	.00	19.54
89298	.06	.00	.00	42.27	.27	14.61	31.21	4.95	14.65	19.56	45.86	.00	19.56
89299	.01	.00	.00	41.90	.27	14.61	31.21	4.98	14.69	19.59	45.89	.00	19.59
89300	.02	.00	.00	41.54	.27	14.61	31.21	4.99	14.72	19.60	45.93	.00	19.60
89301	.06	.00	.00	41.18	.27	14.61	31.21	5.02	14.76	19.63	45.96	.00	19.63
89304	.17	.00	.00	40.46	.27	14.61	31.21	5.07	14.86	19.68	46.07	.00	19.68
89307	.02	.00	.00	39.39	.27	14.61	31.21	5.14	14.96	19.75	46.17	.00	19.75
89308	.01	.00	.00	38.67	.27	14.61	31.21	5.16	14.99	19.77	46.20	.00	19.77
89309	.02	.00	.00	38.32	.27	14.61	31.21	5.18	15.03	19.79	46.23	.00	19.79
89311	.01	.00	.00	37.79	.27	14.61	31.21	5.22	15.09	19.83	46.30	.00	19.83
89312	.01	.00	.00	37.26	.27	14.61	31.21	5.25	15.13	19.86	46.33	.00	19.86
89317	.02	.00	.00	36.23	.27	14.61	31.21	5.32	15.28	19.93	46.49	.00	19.93
89318	.04	.00	.00	35.20	.27	14.61	31.21	5.35	15.31	19.96	46.52	.00	19.96
89319	.03	.00	.00	34.86	.27	14.61	31.21	5.37	15.34	19.98	46.55	.00	19.98
89321	.01	.00	.00	34.36	.27	14.61	31.21	5.41	15.40	20.02	46.61	.00	20.02

ANNUAL TOTALS FOR 1989

PRECIP., TOTAL	=	11.960 IN
PRECIP., NET	=	11.960 IN
PREDICTED RUNOFF	=	1.207 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	14.617 IN
ACTUAL SOIL EVAP	=	5.826 IN
TOTAL ET	=	20.443 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	20.443 IN
BEGIN SOIL WATER	=	9.690 IN
FINAL SOIL WATER	=	.000 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL W IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
90083	.05	.00	.00	25.73	.26	.00	.00	.04	1.82	.04	1.82	.00	.04		
90084	.05	.00	.00	32.55	.26	.00	.00	.08	1.86	.08	1.86	.00	.08		
90085	.09	.00	.00	32.87	.26	.00	.00	.12	1.90	.12	1.90	.00	.12		
90086	.12	.01	.00	33.19	.26	.00	.00	.17	1.94	.17	1.94	.00	.17		
90087	.15	.02	.00	33.51	.26	.00	.00	.21	1.99	.21	1.99	.00	.21		
90088	.18	.02	.00	33.84	.27	.00	.00	.26	2.03	.26	2.03	.00	.26		
90089	.22	.03	.00	34.17	.27	.00	.00	.30	2.08	.30	2.08	.00	.30		
90090	.25	.05	.00	34.50	.27	.00	.00	.35	2.12	.35	2.13	.00	.35		
90091	.28	.06	.00	34.83	.27	.00	.01	.40	2.17	.40	2.18	.00	.40		
90092	.32	.08	.00	35.17	.28	.00	.01	.44	2.22	.45	2.23	.00	.45		
90093	.35	.09	.00	35.51	.28	.00	.01	.49	2.27	.50	2.28	.00	.50		
90094	.32	.08	.00	35.85	.28	.01	.02	.54	2.32	.55	2.33	.00	.55		
90102	.08	.00	.00	37.41	.28	.05	.12	.80	2.75	.85	2.86	.00	.85		
90104	.20	.00	.00	39.17	.28	.07	.15	.88	2.86	.95	3.02	.00	.95		
90105	.02	.00	.00	39.71	.28	.08	.17	.93	2.92	1.01	3.10	.00	1.01		
90108	.09	.00	.00	40.43	.28	.10	.24	1.05	3.11	1.16	3.34	.00	1.16		
90112	.14	.00	.00	41.69	.28	.14	.33	1.19	3.37	1.34	3.70	.00	1.34		
90113	.03	.00	.00	42.59	.28	.16	.36	1.25	3.44	1.40	3.80	.00	1.40		
90114	.77	.00	.00	42.96	.29	.17	.39	1.32	3.50	1.49	3.89	.00	1.49		
90115	.01	.00	.00	43.32	.29	.19	.42	1.38	3.57	1.58	3.99	.00	1.58		
90116	.02	.00	.00	43.68	.29	.21	.45	1.46	3.64	1.67	4.09	.00	1.67		
90117	.04	.00	.00	44.04	.29	.23	.48	1.53	3.71	1.76	4.20	.00	1.76		
90118	.06	.00	.00	44.40	.29	.25	.52	1.60	3.79	1.85	4.30	.00	1.85		
90119	.13	.00	.00	44.76	.29	.27	.55	1.67	3.86	1.94	4.41	.00	1.94		
90120	.01	.00	.00	45.12	.29	.29	.59	1.74	3.93	2.03	4.52	.00	2.03		
90122	.07	.00	.00	45.66	.28	.34	.67	1.89	4.09	2.23	4.75	.00	2.23		
90124	.02	.00	.00	46.38	.28	.38	.75	2.02	4.24	2.40	4.99	.00	2.40		
90127	.01	.00	.00	47.27	.28	.43	.89	2.13	4.48	2.57	5.37	.00	2.57		
90128	.03	.00	.00	47.97	.28	.45	.93	2.19	4.56	2.64	5.50	.00	2.64		
90129	.07	.00	.00	48.32	.28	.47	.98	2.25	4.65	2.72	5.63	.00	2.72		
90130	.01	.00	.00	48.67	.28	.49	1.03	2.28	4.73	2.77	5.77	.00	2.77		
90131	.03	.00	.00	49.02	.28	.51	1.08	2.31	4.82	2.82	5.90	.00	2.82		
90132	.01	.00	.00	49.36	.28	.53	1.14	2.34	4.90	2.87	6.04	.00	2.87		
90133	.31	.00	.00	49.70	.28	.55	1.19	2.43	4.99	2.98	6.18	.00	2.98		
90134	.13	.00	.00	50.04	.28	.57	1.24	2.52	5.08	3.09	6.32	.00	3.09		
90135	.17	.00	.00	50.38	.28	.60	1.29	2.60	5.17	3.20	6.46	.00	3.20		
90137	.21	.00	.00	50.89	.28	.65	1.40	2.78	5.35	3.43	6.75	.00	3.43		
90138	.12	.00	.00	51.39	.28	.67	1.45	2.87	5.44	3.54	6.89	.00	3.54		
90139	.03	.00	.00	51.72	.28	.69	1.51	2.96	5.53	3.65	7.04	.00	3.65		
90140	.90	.00	.00	52.04	.29	.73	1.56	3.05	5.62	3.79	7.19	.00	3.92		
90141	.01	.00	.00	52.37	.29	.77	1.62	3.15	5.72	3.92	7.34	.00	3.92		
90143	.11	.00	.00	52.85	.29	.84	1.73	3.31	5.91	4.15	7.64	.00	4.15		
90144	.03	.00	.00	53.32	.29	.88	1.79	3.37	6.01	4.25	7.80	.00	4.25		
90145	.15	.00	.00	53.63	.29	.91	1.85	3.47	6.10	4.38	7.95	.00	4.38		
90146	.01	.00	.00	53.94	.28	.95	1.91	3.53	6.20	4.48	8.11	.00	4.48		
90148	.02	.00	.00	54.40	.28	1.01	2.03	3.69	6.40	4.70	8.43	.00	4.70		
90149	.24	.00	.00	54.85	.28	1.04	2.09	3.77	6.50	4.81	8.59	.00	4.81		
90150	.55	.00	.00	55.14	.29	1.08	2.15	3.87	6.60	4.96	8.75	.00	4.96		
90151	.26	.00	.00	55.44	.29	1.13	2.21	3.98	6.71	5.11	8.92	.00	5.11		
90152	.01	.00	.00	55.72	.29	1.17	2.27	4.08	6.81	5.25	9.08	.00	5.25		
90158	.05	.00	.00	56.69	.28	1.38	2.65	4.40	7.45	5.78	10.09	.00	5.78		
90159	.01	.00	.00	57.63	.28	1.41	2.71	4.44	7.55	5.86	10.27	.00	5.86		

90160	.20	.00	.00	57.88	.28	1.44	2.78	4.55	7.66	6.00	10.44	.00	6.00
90161	.01	.00	.00	58.13	.28	1.48	2.84	4.60	7.77	6.08	10.61	.00	6.08
90162	.01	.00	.00	58.38	.28	1.50	2.91	4.65	7.88	6.15	10.79	.00	6.15
90164	.02	.00	.00	58.74	.28	1.56	3.04	4.72	8.10	6.28	11.14	.00	6.28
90165	.15	.00	.00	59.09	.28	1.59	3.11	4.84	8.22	6.42	11.32	.00	6.42
90166	.29	.00	.00	59.32	.28	1.62	3.17	4.90	8.33	6.52	11.50	.00	6.52
90167	.28	.00	.00	59.54	.28	1.66	3.24	5.02	8.44	6.67	11.68	.00	6.67
90169	.02	.00	.00	59.86	.28	1.72	3.37	5.20	8.67	6.92	12.04	.00	6.92
90176	.13	.00	.00	60.76	.27	1.89	3.85	5.57	9.47	7.45	13.33	.00	7.45
90178	.01	.00	.00	61.56	.27	1.92	3.99	5.63	9.71	7.55	13.70	.00	7.55
90179	.02	.00	.00	61.81	.27	1.94	4.06	5.67	9.83	7.61	13.89	.00	7.61
90183	.18	.00	.00	62.18	.27	2.00	4.34	5.85	10.30	7.86	14.64	.00	7.86
90184	.01	.00	.00	62.52	.27	2.02	4.41	5.88	10.42	7.90	14.83	.00	7.90
90188	.05	.00	.00	62.82	.27	2.07	4.70	5.98	10.89	8.05	15.59	.00	8.05
90193	.01	.00	.00	63.26	.27	2.12	5.05	6.08	11.48	8.20	16.53	.00	8.20
90201	.01	.00	.00	63.69	.26	2.16	5.61	6.20	12.43	8.37	18.04	.00	8.37
90205	.02	.00	.00	63.87	.26	2.18	5.89	6.26	12.90	8.44	18.79	.00	8.44
90207	.28	.00	.00	63.87	.26	2.19	6.03	6.39	13.13	8.57	19.16	.00	8.57
90208	.01	.00	.00	63.85	.26	2.19	6.10	6.41	13.25	8.61	19.35	.00	8.61
90209	.01	.00	.00	63.83	.26	2.20	6.17	6.44	13.36	8.64	19.53	.00	8.64
90211	.02	.00	.00	63.79	.26	2.21	6.30	6.47	13.59	8.68	19.90	.00	8.68
90212	.55	.00	.00	63.73	.27	2.23	6.37	6.58	13.71	8.81	20.08	.00	8.81
90223	.45	.00	.00	63.33	.27	2.33	7.10	6.95	14.93	9.29	22.03	.00	9.29
90229	.08	.00	.00	62.46	.27	2.39	7.48	7.26	15.56	9.65	23.04	.00	9.65
90230	.35	.00	.00	61.97	.27	2.40	7.54	7.35	15.67	9.75	23.21	.00	9.75
90231	.24	.00	.00	61.82	.27	2.42	7.60	7.45	15.77	9.87	23.37	.00	9.87
90232	.11	.00	.00	61.66	.27	2.44	7.66	7.55	15.87	9.99	23.53	.00	9.99
90233	.03	.00	.00	61.50	.27	2.45	7.72	7.65	15.97	10.10	23.69	.00	10.10
90234	.07	.00	.00	61.33	.27	2.46	7.78	7.75	16.07	10.22	23.85	.00	10.22
90235	.12	.00	.00	61.15	.27	2.48	7.84	7.85	16.17	10.33	24.01	.00	10.33
90236	.02	.00	.00	60.97	.27	2.49	7.90	7.93	16.27	10.42	24.17	.00	10.42
90237	.35	.00	.00	60.79	.27	2.51	7.96	8.03	16.37	10.54	24.33	.00	10.54
90238	.11	.00	.00	60.59	.27	2.52	8.01	8.13	16.47	10.65	24.48	.00	10.65
90239	.06	.00	.00	60.40	.27	2.54	8.07	8.22	16.56	10.76	24.63	.00	10.76
90243	.01	.00	.00	59.88	.27	2.58	8.29	8.52	16.94	11.10	25.23	.00	11.10
90246	.01	.00	.00	59.11	.26	2.59	8.46	8.63	17.21	11.22	25.67	.00	11.22
90247	.07	.00	.00	58.64	.26	2.60	8.51	8.69	17.30	11.28	25.81	.00	11.28
90248	.09	.00	.00	58.40	.26	2.60	8.56	8.76	17.39	11.36	25.95	.00	11.36
90251	.20	.00	.00	57.90	.26	2.62	8.72	8.90	17.65	11.52	26.36	.00	11.52
90253	.08	.00	.00	57.26	.26	2.63	8.81	9.00	17.82	11.63	26.63	.00	11.63
90269	.01	.00	.00	54.69	.26	2.66	9.53	9.20	19.02	11.86	28.54	.00	11.86
90270	.04	.00	.00	52.07	.26	2.66	9.57	9.23	19.08	11.90	28.65	.00	11.90
90275	.05	.00	.00	51.08	.26	2.67	9.57	9.27	19.40	11.94	28.97	.00	11.94
90276	.02	.00	.00	50.08	.26	2.67	9.57	9.29	19.46	11.96	29.03	.00	11.96
90277	.02	.00	.00	49.74	.26	2.67	9.57	9.31	19.52	11.98	29.09	.00	11.98
90278	.03	.00	.00	49.39	.26	2.67	9.57	9.33	19.58	12.00	29.15	.00	12.00
90279	.01	.00	.00	49.05	.26	2.67	9.57	9.35	19.64	12.02	29.20	.00	12.02
90289	.12	.00	.00	47.12	.26	2.68	9.57	9.40	20.16	12.08	29.73	.00	12.08
90292	.03	.00	.00	44.80	.26	2.68	9.57	9.45	20.30	12.13	29.87	.00	12.13
90305	.02	.00	.00	41.91	.26	2.68	9.57	9.52	20.82	12.20	30.39	.00	12.20
90308	.07	.00	.00	39.03	.26	2.68	9.57	9.55	20.93	12.24	30.49	.00	12.24
90309	.24	.00	.00	38.32	.26	2.68	9.57	9.59	20.96	12.27	30.53	.00	12.27
90310	.02	.00	.00	37.97	.26	2.68	9.57	9.60	20.99	12.29	30.56	.00	12.29
90318	.25	.00	.00	36.40	.26	2.68	9.57	9.72	21.22	12.41	30.79	.00	12.41
90319	.03	.00	.00	34.86	.27	2.68	9.57	9.75	21.25	12.43	30.82	.00	12.43
90324	.12	.00	.00	33.87	.27	2.68	9.57	9.84	21.38	12.53	30.94	.00	12.53

ANNUAL TOTALS FOR 1990

PRECIP., TOTAL	=	13.380 IN
PRECIP., NET	=	13.380 IN
PREDICTED RUNOFF	=	.447 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	2.684 IN
ACTUAL SOIL EVAP	=	10.250 IN
TOTAL ET	=	12.933 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.933 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.000 IN

IRRIGATION APPLIED= .000 IN
WATER BUDGET BAL. = .000 IN

DATE JULIAN	RAIN-FALL IN	RUN-OFF IN	PERC. IN	AVG. TEMP. F.	AVG. SOIL M IN/IN	ACT. EP IN	POT. EP IN	ACT. ES IN	POT. ES IN	ACT. ET IN	POT. ET IN	INT. IN	INT. + ET IN	IRRIG. APPL. IN	CHMGA. APPL. IN
91083	.14	.01	.00	25.55	.26	.00	.00	.04	1.82	.04	1.82	.00	.04		
91084	.06	.00	.00	32.55	.26	.00	.00	.08	1.86	.08	1.86	.00	.08		
91085	.29	.06	.00	32.87	.26	.00	.00	.12	1.90	.12	1.90	.00	.12		
91086	.17	.02	.00	33.19	.27	.00	.00	.17	1.94	.17	1.94	.00	.17		
91087	.15	.02	.00	33.51	.27	.00	.00	.21	1.99	.21	1.99	.00	.21		
91088	.19	.03	.00	33.84	.27	.00	.00	.26	2.03	.26	2.03	.00	.26		
91089	.22	.04	.00	34.17	.27	.00	.01	.30	2.08	.30	2.08	.00	.30		
91090	.25	.05	.00	34.50	.27	.00	.01	.35	2.12	.35	2.13	.00	.35		
91091	.28	.06	.00	34.83	.28	.00	.01	.40	2.17	.40	2.18	.00	.40		
91092	.02	.00	.00	35.17	.28	.01	.02	.44	2.22	.44	2.24	.00	.44		
91093	.02	.00	.00	35.51	.28	.01	.02	.48	2.27	.48	2.29	.00	.48		
91094	.05	.00	.00	35.85	.28	.01	.03	.52	2.32	.53	2.35	.00	.53		
91096	.21	.04	.00	36.36	.28	.02	.05	.59	2.42	.60	2.47	.00	.60		
91100	.02	.00	.00	37.41	.28	.04	.11	.69	2.63	.73	2.74	.00	.75		
91102	.01	.00	.00	38.46	.28	.05	.14	.74	2.75	.79	2.89	.00	.79		
91105	.05	.00	.00	39.35	.28	.07	.20	.81	2.92	.89	3.12	.00	.89		
91106	.05	.00	.00	40.07	.28	.08	.22	.85	2.98	.93	3.20	.00	.93		
91107	.10	.00	.00	40.43	.28	.09	.24	.91	3.05	1.00	3.28	.00	1.00		
91108	.03	.00	.00	40.79	.28	.09	.26	.94	3.11	1.03	3.37	.00	1.03		
91109	.03	.00	.00	41.15	.28	.10	.28	.96	3.17	1.07	3.45	.00	1.07		
91116	.01	.00	.00	42.59	.27	.16	.47	1.09	3.64	1.25	4.11	.00	1.25		
91119	.05	.00	.00	44.40	.27	.19	.56	1.16	3.86	1.35	4.42	.00	1.35		
91120	.09	.00	.00	45.12	.27	.20	.59	1.23	3.93	1.43	4.52	.00	1.43		
91121	.01	.00	.00	45.48	.27	.20	.62	1.26	4.01	1.46	4.63	.00	1.46		
91123	.02	.00	.00	46.02	.27	.22	.69	1.29	4.16	1.51	4.86	.00	1.51		
91128	.12	.00	.00	47.26	.27	.27	.88	1.43	4.56	1.69	5.45	.00	1.69		
91129	.22	.00	.00	48.32	.27	.28	.92	1.51	4.65	1.79	5.57	.00	1.79		
91130	.25	.00	.00	48.67	.28	.30	.97	1.59	4.73	1.89	5.70	.00	1.89		
91131	.37	.00	.00	49.02	.28	.31	1.01	1.67	4.82	1.99	5.82	.00	1.99		
91132	.01	.00	.00	49.36	.28	.33	1.05	1.73	4.90	2.06	5.95	.00	2.06		
91134	.21	.00	.00	49.87	.28	.37	1.14	1.89	5.08	2.26	6.21	.00	2.26		
91137	.16	.00	.00	50.72	.28	.42	1.27	2.14	5.35	2.56	6.61	.00	2.56		
91138	.55	.00	.00	51.39	.28	.44	1.31	2.23	5.44	2.67	6.75	.00	2.67		
91139	.38	.00	.00	51.72	.29	.47	1.36	2.32	5.53	2.80	6.89	.00	2.80		
91140	.02	.00	.00	52.04	.29	.50	1.40	2.42	5.62	2.92	7.03	.00	2.92		
91141	.01	.00	.00	52.37	.28	.53	1.45	2.50	5.72	3.02	7.17	.00	3.02		
91145	.25	.00	.00	53.16	.28	.62	1.64	2.76	6.10	3.39	7.74	.00	3.39		
91147	.28	.00	.00	54.09	.28	.67	1.74	2.96	6.30	3.63	8.04	.00	3.63		
91148	.01	.00	.00	54.55	.28	.70	1.79	3.04	6.40	3.74	8.19	.00	3.74		
91149	.02	.00	.00	54.85	.28	.72	1.84	3.14	6.50	3.86	8.34	.00	3.86		
91150	.12	.00	.00	55.14	.28	.74	1.89	3.21	6.60	3.95	8.49	.00	3.95		
91151	.03	.00	.00	55.44	.28	.77	1.94	3.31	6.71	4.08	8.64	.00	4.08		
91154	.03	.00	.00	56.01	.28	.83	2.09	3.47	7.02	4.30	9.11	.00	4.30		
91155	.12	.00	.00	56.56	.28	.84	2.14	3.57	7.12	4.41	9.27	.00	4.41		
91156	.57	.00	.00	56.84	.28	.87	2.19	3.67	7.23	4.55	9.42	.00	4.55		
91157	.15	.00	.00	57.10	.28	.90	2.25	3.78	7.34	4.68	9.58	.00	4.68		
91158	.12	.00	.00	57.37	.28	.93	2.30	3.89	7.45	4.82	9.74	.00	4.82		
91159	.01	.00	.00	57.63	.28	.96	2.35	4.00	7.55	4.95	9.91	.00	4.95		
91171	.91	.00	.00	59.17	.28	1.18	3.01	4.54	8.90	5.72	11.91	.00	5.72		
91173	.03	.00	.00	60.67	.28	1.24	3.12	4.72	9.13	5.96	12.25	.00	5.96		
91174	.02	.00	.00	60.95	.28	1.26	3.18	4.83	9.24	6.09	12.42	.00	6.09		
91175	.02	.00	.00	61.14	.28	1.29	3.24	4.90	9.36	6.18	12.60	.00	6.18		
91176	.03	.00	.00	61.31	.28	1.31	3.30	4.97	9.47	6.27	12.77	.00	6.27		
91177	.01	.00	.00	61.48	.27	1.33	3.35	5.01	9.59	6.34	12.94	.00	6.34		
91179	.11	.00	.00	61.73	.27	1.37	3.47	5.13	9.83	6.49	13.29	.00	6.49		
91181	.05	.00	.00	62.03	.27	1.40	3.58	5.20	10.06	6.60	13.64	.00	6.60		
91182	.02	.00	.00	62.25	.27	1.42	3.64	5.25	10.18	6.66	13.82	.00	6.66		
91191	.10	.00	.00	62.86	.27	1.53	4.17	5.49	11.25	7.03	15.41	.00	7.03		
91195	.03	.00	.00	63.46	.27	1.57	4.40	5.57	11.72	7.14	16.12	.00	7.14		
91206	.22	.00	.00	63.80	.26	1.64	5.03	5.83	13.02	7.47	18.05	.00	7.47		
91207	.12	.00	.00	63.87	.27	1.65	5.09	5.92	13.13	7.58	18.22	.00	7.58		
91213	.29	.00	.00	63.78	.26	1.69	5.43	6.11	13.82	7.80	19.25	.00	7.80		
91214	.02	.00	.00	63.63	.27	1.70	5.49	6.15	13.93	7.85	19.42	.00	7.85		
91218	.06	.00	.00	63.47	.26	1.72	5.71	6.25	14.38	7.98	20.09	.00	7.98		

91235	.09	.00	.00	62.33	.26	1.77	6.59	6.55	16.17	8.32	22.76	.00	8.32
91239	.28	.00	.00	60.69	.26	1.78	6.78	6.67	16.56	8.45	23.34	.00	8.45
91240	.61	.00	.00	60.20	.27	1.79	6.82	6.75	16.66	8.54	23.48	.00	8.54
91251	.24	.00	.00	58.86	.27	1.87	7.31	7.22	17.65	9.09	24.96	.00	9.09
91252	.03	.00	.00	57.39	.27	1.87	7.35	7.29	17.73	9.16	25.08	.00	9.16
91254	.84	.00	.00	56.99	.27	1.89	7.43	7.40	17.90	9.29	25.33	.00	9.29
91256	.01	.00	.00	56.45	.28	1.92	7.51	7.55	18.06	9.47	25.57	.00	9.47
91257	.19	.00	.00	56.03	.28	1.94	7.55	7.63	18.14	9.57	25.69	.00	9.57
91272	.11	.00	.00	53.63	.27	2.04	8.01	8.24	19.21	10.28	27.23	.00	10.28
91277	.10	.00	.00	50.41	.27	2.04	8.01	8.37	19.52	10.41	27.53	.00	10.41
91290	.06	.00	.00	47.29	.26	2.04	8.01	8.61	20.21	10.65	28.22	.00	10.65
91291	.01	.00	.00	44.80	.26	2.04	8.01	8.64	20.26	10.68	28.27	.00	10.68
91295	.12	.00	.00	43.89	.26	2.04	8.01	8.72	20.43	10.76	28.45	.00	10.76
91298	.01	.00	.00	42.63	.26	2.04	8.01	8.77	20.56	10.81	28.57	.00	10.81
91299	.18	.00	.00	41.90	.26	2.04	8.01	8.81	20.60	10.85	28.61	.00	10.85
91300	.28	.00	.00	41.54	.27	2.04	8.01	8.85	20.64	10.89	28.65	.00	10.89
91301	.06	.00	.00	41.18	.27	2.04	8.01	8.89	20.68	10.93	28.69	.00	10.93
91302	.01	.00	.00	40.82	.27	2.04	8.01	8.92	20.72	10.97	28.73	.00	10.97
91304	.24	.00	.00	40.28	.27	2.04	8.01	8.99	20.79	11.03	28.80	.00	11.03
91305	.12	.00	.00	39.74	.27	2.04	8.01	9.03	20.82	11.07	28.84	.00	11.07
91309	.18	.00	.00	38.85	.27	2.04	8.01	9.16	20.96	11.20	28.97	.00	11.20
91310	.14	.00	.00	37.97	.28	2.04	8.01	9.19	20.99	11.24	29.01	.00	11.24
91313	.09	.00	.00	37.26	.27	2.04	8.01	9.29	21.08	11.33	29.10	.00	11.33
91316	.04	.00	.00	36.22	.27	2.04	8.01	9.37	21.17	11.41	29.18	.00	11.41
91317	.06	.00	.00	35.54	.28	2.04	8.01	9.40	21.20	11.44	29.21	.00	11.44
91322	.07	.00	.00	34.53	.27	2.04	8.01	9.53	21.33	11.57	29.34	.00	11.57
91323	.04	.00	.00	33.54	.27	2.04	8.01	9.56	21.35	11.60	29.37	.00	11.60
91324	.12	.00	.00	33.22	.28	2.04	8.01	9.58	21.38	11.62	29.39	.00	11.62
91325	.09	.00	.00	32.90	.28	2.04	8.01	9.60	21.40	11.64	29.41	.00	11.64
91326	.01	.00	.00	32.58	.28	2.04	8.01	9.63	21.42	11.67	29.44	.00	11.67

ANNUAL TOTALS FOR 1991

PRECIP., TOTAL	=	13.010 IN
PRECIP., NET	=	13.010 IN
PREDICTED RUNOFF	=	.324 IN
DEEP PERCOLATION	=	.000 IN
ACTUAL PLANT EVAP	=	2.040 IN
ACTUAL SOIL EVAP	=	10.280 IN
TOTAL ET	=	12.321 IN
TOTAL INTERCEPTION	=	.000 IN
TOTAL INT PLUS ET	=	12.321 IN
BEGIN SOIL WATER	=	.000 IN
FINAL SOIL WATER	=	.366 IN
IRRIGATION APPLIED	=	.000 IN
WATER BUDGET BAL.	=	.000 IN

AVERAGE ANNUAL VALUES

PRECIPITATION	=	12.783
PREDICTED RUNOFF	=	.659
DEEP PERCOLATION	=	.000
TOTAL ET	=	15.232
IRRIGATION APPLIED	=	.000

AVG. AVAL. STORAGE	=	18.639 IN
FINAL AVAL. STORAGE	=	20.034 IN

FINAL STORAGE FOR EACH FRACTION

.000	.000	.366	.000	.000	.000	.000	.000	.000	.000	.000	.000

G L E A M S HYDROLOGY SUMMARY

VERSION 2.01 NOVEMBER 1, 1992

SILVER BOW CREEK

OPPORTUNITY DEEP-TILL SIMULATION

1989-1991

1989

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.440	.000	25.070	.000
FEB	.000	.000	.000	.455	.000	24.601	.000
MAR	1.245	1.245	.215	.978	.000	24.219	.000
APR	3.735	3.735	.992	3.623	.000	24.616	.000
MAY	1.480	1.480	.000	5.545	.000	21.387	.000
JUN	.920	.920	.000	4.313	.000	17.335	.000
JUL	1.070	1.070	.000	1.156	.000	15.842	.000
AUG	2.180	2.180	.000	1.666	.000	16.134	.000
SEP	.300	.300	.000	1.033	.000	16.027	.000
OCT	.860	.860	.000	.476	.000	16.113	.000
NOV	.170	.170	.000	.486	.000	16.023	.000
DEC	.000	.000	.000	.273	.000	15.721	.000
TOT	11.960	11.960	1.207	20.443	.000	19.424	.000

1990

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	15.600	.000
FEB	.000	.000	.000	.000	.000	15.600	.000
MAR	1.115	1.115	.133	.349	.000	15.662	.000
APR	2.875	2.875	.314	1.683	.000	16.880	.000
MAY	3.500	3.500	.000	3.073	.000	16.926	.000
JUN	1.210	1.210	.000	2.580	.000	16.713	.000
JUL	1.150	1.150	.000	1.124	.000	15.894	.000
AUG	2.000	2.000	.000	2.292	.000	16.040	.000
SEP	.500	.500	.000	.802	.000	15.695	.000
OCT	.280	.280	.000	.280	.000	15.613	.000
NOV	.750	.750	.000	.511	.000	15.850	.000
DEC	.000	.000	.000	.239	.000	15.669	.000
TOT	13.380	13.380	.447	12.933	.000	16.012	.000

1991

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
	IN	IN	IN	IN	IN	IN	IN
JAN	.000	.000	.000	.000	.000	15.600	.000
FEB	.000	.000	.000	.000	.000	15.600	.000
MAR	1.475	1.475	.224	.351	.000	15.718	.000
APR	1.025	1.025	.100	1.078	.000	16.539	.000
MAY	3.040	3.040	.000	2.648	.000	16.673	.000
JUN	2.180	2.180	.000	2.521	.000	16.600	.000
JUL	.490	.490	.000	1.079	.000	16.000	.000
AUG	1.350	1.350	.000	1.092	.000	15.806	.000
SEP	1.420	1.420	.000	1.529	.000	16.120	.000
OCT	1.070	1.070	.000	.734	.000	15.875	.000
NOV	.960	.960	.000	.804	.000	16.481	.000
DEC	.000	.000	.000	.484	.000	16.186	.000
TOT	13.010	13.010	.324	12.321	.000	16.100	.000

ANNUAL AVERAGES

MONTH	TOTAL RAIN	NET RAIN	RUNOFF	ET	PERC	AVG SW	IRRIGAT
JAN	.000	.000	.000	.147	.000	18.757	.000
FEB	.000	.000	.000	.152	.000	18.600	.000
MAR	1.278	1.278	.191	.560	.000	18.533	.000
APR	2.545	2.545	.468	2.128	.000	19.345	.000
MAY	2.673	2.673	.000	3.755	.000	18.329	.000
JUN	1.437	1.437	.000	3.138	.000	16.883	.000
JUL	.903	.903	.000	1.120	.000	15.912	.000
AUG	1.843	1.843	.000	1.683	.000	15.994	.000
SEP	.740	.740	.000	1.121	.000	15.947	.000
OCT	.737	.737	.000	.497	.000	15.867	.000
NOV	.627	.627	.000	.600	.000	16.118	.000
DEC	.000	.000	.000	.332	.000	15.859	.000
TOT	12.783	12.783	.659	15.232	.000	17.179	.000

****
SNOW NOTICE
****
DUE TO BELOW FREEZING TEMPERATURES, THIS RUN INCLUDED SNOW.
THE RAINFALL REGIMEN WAS CHANGED DUE TO PACK AND THAW.

EROSION INPUT PARAMETER FILENAME: rf09ero.par

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

```
CARD   1:SILVER BOW CREEK RI/FS
CARD   2:OPPORTUNITY DEEP-PLOW PLOT
CARD   3:1989-1991
CARD   4:      89      91       2       1       0
CARD   5:    .150    .300    .550 100.0002000.000
CARD   6:       2  22.960
CARD   7:1400.000    .0151450.000    .300
CARD   8:       1   1.000    .260
CARD  14:       3
CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  15:       1       0       0       0       0       0       0       0       0       0

CARD  16:       1   1.000
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
CARD  17:    .200
CARD  18:   1.000
CARD  19:    .015
```

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
OPPORTUNITY DEEP-PLOW PLOT
1989-1991

PARTICLE SPECIFICATIONS

TYPE NO.	DIA. MM	SPGRAV. GM/CM**3	FRAC. IN DETACH. SED.
1	.002	2.60	.04
2	.010	2.65	.07
3	.030	1.80	.23
4	.300	1.60	.42
5	.200	2.65	.24

OVERLAND FLOW INPUTS

OVERLAND FLOW TOPOGRAPHY

OVERLAND AREA	22.9600 ACRES
SLOPE LENGTH	1450.00 FT
AVERAGE SLOPE	.0199

SEGMENT TYPES DEFINING THE OVERLAND FLOW PROFILE

SEGMENT 1 IS UNIFORM
SEGMENT 2 IS CONVEX

SLOPE STEEPNESS ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SLOPE
.0	.000	.015
1400.0	.966	.015
1410.0	.972	.072
1420.0	.979	.128
1430.0	.986	.183
1440.0	.993	.236
1450.0	1.000	.287

SOIL ERODIBILITY ALONG THE OVERLAND FLOW PROFILE

DISTANCE FEET	DISTANCE NONDIM.	SOIL EROD
1450.0	1.000	.260

MONTHLY SUMMARY FOR JAN, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1989

8 STORMS PRODUCED 1.24 IN. OF RAINFALL
6 STORMS PRODUCED .22 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .17 TONS/ACRE
ENRICHMENT RATIO 1.044

MONTHLY SUMMARY FOR APR, 1989

20 STORMS PRODUCED 3.74 IN. OF RAINFALL
7 STORMS PRODUCED .99 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS 1.18 TONS/ACRE
ENRICHMENT RATIO 1.002

MONTHLY SUMMARY FOR MAY, 1989

18 STORMS PRODUCED 1.48 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1989

9 STORMS PRODUCED .92 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1989

11 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1989

19 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1989

5 STORMS PRODUCED .30 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1989

13 STORMS PRODUCED .86 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1989

9 STORMS PRODUCED .17 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1989

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1989

112 STORMS PRODUCED 11.96 IN. OF RAINFALL
13 STORMS PRODUCED 1.21 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS 1.35 TONS/ACRE
ENRICHMENT RATIO 1.007

MONTHLY SUMMARY FOR JAN, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1990

8 STORMS PRODUCED 1.11 IN. OF RAINFALL
5 STORMS PRODUCED .13 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .10 TONS/ACRE
ENRICHMENT RATIO 1.066

MONTHLY SUMMARY FOR APR, 1990

17 STORMS PRODUCED 2.88 IN. OF RAINFALL
4 STORMS PRODUCED .31 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .30 TONS/ACRE
ENRICHMENT RATIO 1.021

MONTHLY SUMMARY FOR MAY, 1990

24 STORMS PRODUCED 3.50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1990

14 STORMS PRODUCED 1.21 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1990

11 STORMS PRODUCED 1.15 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1990

13 STORMS PRODUCED 2.00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1990

7 STORMS PRODUCED .50 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1990

7 STORMS PRODUCED .28 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1990

7 STORMS PRODUCED .75 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR DEC, 1990

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

ANNUAL SUMMARY FOR 1990

108 STORMS PRODUCED 13.38 IN. OF RAINFALL
9 STORMS PRODUCED .45 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS .40 TONS/ACRE
ENRICHMENT RATIO 1.032

MONTHLY SUMMARY FOR JAN, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR FEB, 1991

0 STORMS PRODUCED .00 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR MAR, 1991

8 STORMS PRODUCED 1.47 IN. OF RAINFALL
7 STORMS PRODUCED .22 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .18 TONS/ACRE
ENRICHMENT RATIO 1.058

MONTHLY SUMMARY FOR APR, 1991

15 STORMS PRODUCED 1.03 IN. OF RAINFALL
2 STORMS PRODUCED .10 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

MONTHLY SOIL LOSS .08 TONS/ACRE
ENRICHMENT RATIO 1.037

MONTHLY SUMMARY FOR MAY, 1991

19 STORMS PRODUCED 3.04 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUN, 1991

14 STORMS PRODUCED 2.18 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR JUL, 1991

5 STORMS PRODUCED .49 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR AUG, 1991

6 STORMS PRODUCED 1.35 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR SEP, 1991

6 STORMS PRODUCED 1.42 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR OCT, 1991

10 STORMS PRODUCED 1.07 IN. OF RAINFALL
0 STORMS PRODUCED .00 IN. OF RUNOFF

MONTHLY SUMMARY FOR NOV, 1991

11 STORMS PRODUCED	.96 IN. OF RAINFALL
0 STORMS PRODUCED	.00 IN. OF RUNOFF

MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

MONTHLY SUMMARY FOR DEC, 1991

0 STORMS PRODUCED	.00 IN. OF RAINFALL
0 STORMS PRODUCED	.00 IN. OF RUNOFF

YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

ANNUAL SUMMARY FOR 1991

94 STORMS PRODUCED	13.01 IN. OF RAINFALL
9 STORMS PRODUCED	.32 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

ANNUAL SOIL LOSS	.26 TONS/ACRE
ENRICHMENT RATIO	1.051

G L E A M S NONPOINT SOURCE POLLUTION MODEL (EROSION/SEDIMENT YIELD)

VERSION 2.01, NOVEMBER 1, 1992 TIFTON GA

SILVER BOW CREEK RI/FS
OPPORTUNITY DEEP-PLOW PLOT
1989-1991

STORM SUMMARY

314 STORMS PRODUCED	38.35 IN. OF RAINFALL
31 STORMS PRODUCED	1.98 IN. OF RUNOFF

VALUES FROM OVERLAND FLOW

THE QUANTITY OF ERODED SEDIMENT IN RUNOFF

PART. TYPE	FRAC. IN SED. LOAD	SOIL LOSS LBS.	CONCENTRATIONS (SOIL/WATER) LBSF/FT**3	LBSF/LBSF	PPM (WT)
1	.04	3661.	.0222	.0004	356.
2	.07	6548.	.0397	.0006	637.
3	.23	21611.	.1311	.0021	2101.
4	.42	38696.	.2348	.0038	3762.
5	.23	21464.	.1302	.0021	2087.
TOTAL		91980.	.5581	.0089	8943.

TOTAL SOIL LOSS FOR AREA 2.00 TONS/ACRE
(AREA = 22.9600 ACRES)

DISTRIBUTION OF PRIMARY PARTICLES

AND ORGANIC MATTER IN THE ERODED SEDIMENT

TYPE	FRACTION
CLAY	.153
SILT	.305
SAND	.542
ORGANIC MATTER	.010

INDEX OF SPECIFIC SURFACE 28.12 M**2/G OF TOTAL SEDIMENT

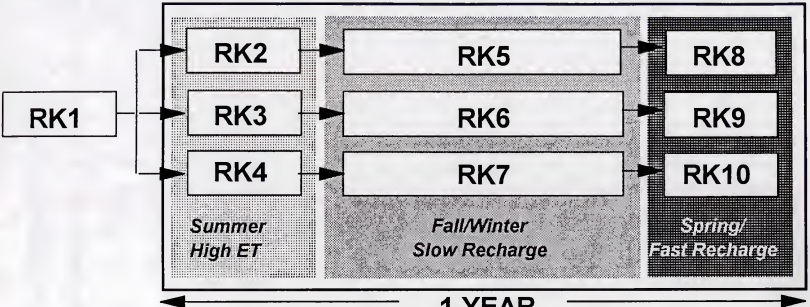
ENRICHMENT RATIO OF SPECIFIC SURFACE 1.018

APPENDIX E2.1

ROCKER UNSAT2 MODEL RUN

ROCKER UNSAT2 MODEL RUNS

TREATMENT COMPARISONS

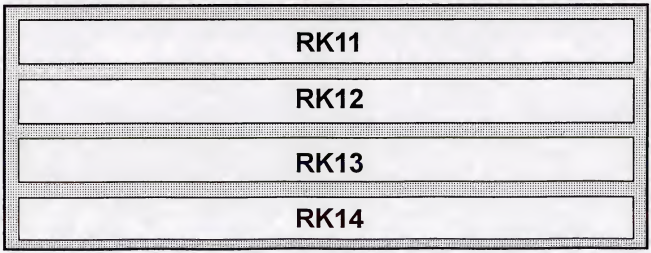


Control/Bare Soil

Deep-Plow/Vegetated

Zero Flux/Internal Drainages

CAPILLARY RISE
EVAPORATION FROM GROUNDWATER



Groundwater = 4 feet

Groundwater = 3 feet

Groundwater = 2 feet

Groundwater = 1 feet

Table . **Domain description for Rocker UNSAT2 model runs.**

Run Number	Treatment	Surface Flux Boundary Condition	Daily Potential Evap (-) or Infiltration (+)	Subsurface Boundary Conditions	Run Duration	Input Head Conditions
RK1	Preliminary Draindown	Zero Flux	Zero	Constant head=0 below 4.5'	90 days	-20 cm suction
RK2	Control/Net Evaporation	Bare soil	-3.22E-06 cm/s	Zero flux	90 days	RK1 output
RK3	Vegetated/Net Evaporation	Vegetated	-3.22E-06 cm/s	Zero flux	90 days	RK1 output
RK4	Zero Flux	Zero Flux	Zero	Zero flux	90 days	RK1 output
RK5	Control/Slow Recharge	Bare soil	+3.22E-07 cm/s	Zero flux	180 days	RK2 output
RK6	Vegetated/Net Evaporation	Vegetated	+3.22E-07 cm/s	Zero flux	180 days	RK3 output
RK7	Zero Flux	Zero Flux	Zero	Zero flux	180 days	RK4 output
RK8	Control/Fast Recharge	Bare soil	+1.28E-06 cm/s	Zero flux	90 days	RK5 output
RK9	Vegetated/Fast Recharge	Vegetated	+1.28E-06 cm/s	Zero flux	90 days	RK6 output
RK10	Zero Flux	Zero Flux	Zero	Zero flux	90 days	RK7 output
RK11[1]	Control-capillary rise from 4 feet	Bare soil	-3.22E-06 cm/s	Constant head below 4 feet	360 days	-20 cm suction, 0 cm suction at 4 feet
RK12[1]	Control-capillary rise from 3 feet	Bare soil	-3.22E-06 cm/s	Constant head below 3 feet	360 days	-20 cm suction, 0 cm suction at 3 feet

Run Number	Treatment	Surface Flux Boundary Condition	Daily Potential Evap (-) or Infiltration (+)	Subsurface Boundary Conditions	Run Duration	Input Head Conditions
RK13[1]	Control-capillary rise from 2 feet	Bare soil	-3.22E-06 cm/s	Constant head below 2 feet	360 days	-20 cm suction, 0 cm suction at 2 feet
RK14[1]	Control-capillary rise from 1 foot	Bare soil	-3.22E-06 cm/s	Constant head below 1 foot	360 days	-20 cm suction, 0 cm suction at 1 foot

[1] - The actual evaporation rate was determined by re-starting the output file from RK11, RK12, RK13 and RK14 for 10 days to determine the daily evaporation rate to see if it was equal to or less than E_o of -3.22E-06 cm/s.

The UNSAT2 runs for the Rocker site consist of the following:

Each run is saved on a separate subdirectory.
The subdirectory contains:

UNSAT.out	Detailed text output for model run
UNS1.DAT	Pass file for next sequential run
UNS10.DAT	Formatted output of domain at end of run
$$$.WQ!	Quattro file for plotting UNS10.dat

The runs are as follows

	Control	Deep Plow	Zero Flux
Day 0-90	RK1	RK1	RK1
Day 90-180 PET -25cm	RK2 Bare Soil	RK3 Veg	RK4 Draindown
Day 180-360 Perc -5cm	RK5 Low Flux	RK6 Low Flux	RK7 Draindown
Day 36-450 Perc -10cm	RK8 High Flux	RK9 High Flux	RK10 Draindown

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  RK01.DAT  ROCKER - PREPARATORY DRAINAGE PERIOD
   80    2   39    2    3    0   30    1    0    0
    0    0    0    0    0    2    1    2   20
  0.00E+00 -1.50E+04  1.00E-01
  5.00E+00  5.00E+00
    2   19
 -1.50E+04  0.00E+00
  5.00E+00  5.00E+00
   39    3   40    4
  2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
  1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
  1.00E+00  1.00E+00  1.00E+00  1.00E+00
    2    2    2    2    1    1    1    1    1    1    1    1    1    1    1
1
    1    1    1    1
  1.00E+01  2.16E+04  2.00E+00 7.776E+06  1.00E+01   40
  1.00E+00  1.00E+00
  2.00E-03  2.00E-02  3.70E-01  0.00E+00  2.00E-02  2.10E+00 5.100E-02
1
  5.00E-04  5.00E-03  5.40E-01  0.00E+00  9.00E-02  1.66E+00 8.700E-02
1
  1.00E-04  1.00E-03  4.80E-01  0.00E+00  3.00E-02  1.60E+00 2.800E-02
1
    1   -4       0.0    243.84    -20.00
    2   -4      10.0    243.84    -20.00
    3    0       0.0    242.57    -20.00
    4    0      10.0    242.57    -20.00
    5    0       0.0    241.30    -20.00
    6    0      10.0    241.30    -20.00
    7    0       0.0    240.03    -20.00
    8    0      10.0    240.03    -20.00
    9    0       0.0    238.76    -20.00
   10    0      10.0    238.76    -20.00
   11    0       0.0    236.22    -20.00
   12    0      10.0    236.22    -20.00
   13    0       0.0    233.68    -20.00
   14    0      10.0    233.68    -20.00
   15    0       0.0    231.14    -20.00
```

16	0	10.0	231.14	-20.00
17	0	0.0	228.60	-20.00
18	0	10.0	228.60	-20.00
19	0	0.0	224.79	-20.00
20	0	10.0	224.79	-20.00
21	0	0.0	220.98	-20.00
22	0	10.0	220.98	-20.00
23	0	0.0	213.36	-20.00
24	0	10.0	213.36	-20.00
25	0	0.0	205.74	-20.00
26	0	10.0	205.74	-20.00
27	0	0.0	198.12	-20.00
28	0	10.0	198.12	-20.00
29	0	0.0	190.50	-20.00
30	0	10.0	190.50	-20.00
31	0	0.0	182.88	-20.00
32	0	10.0	182.88	-20.00
33	0	0.0	175.26	-20.00
34	0	10.0	175.26	-20.00
35	0	0.0	167.64	-20.00
36	0	10.0	167.64	-20.00
37	0	0.0	160.02	-20.00
38	0	10.0	160.02	-20.00
39	0	0.0	152.40	-20.00
40	0	10.0	152.40	-20.00
41	0	0.0	144.78	-20.00
42	0	10.0	144.78	-20.00
43	0	0.0	137.16	-20.00
44	0	10.0	137.16	-20.00
45	0	0.0	129.54	-15.00
46	0	10.0	129.54	-15.00
47	0	0.0	121.92	-10.00
48	0	10.0	121.92	-10.00
49	0	0.0	114.30	-5.00
50	0	10.0	114.30	-5.00
51	1	0.0	106.68	0.00
52	1	10.0	106.68	0.00
53	1	0.0	99.06	0.00
54	1	10.0	99.06	0.00
55	1	0.0	91.44	0.00
56	1	10.0	91.44	0.00
57	1	0.0	83.82	0.00
58	1	10.0	83.82	0.00
59	1	0.0	76.20	0.00
60	1	10.0	76.20	0.00
61	1	0.0	68.58	0.00
62	1	10.0	68.58	0.00
63	1	0.0	60.96	0.00
64	1	10.0	60.96	0.00
65	1	0.0	53.34	0.00
66	1	10.0	53.34	0.00
67	1	0.0	45.72	0.00
68	1	10.0	45.72	0.00
69	1	0.0	38.10	0.00
70	1	10.0	38.10	0.00
71	1	0.0	30.48	0.00
72	1	10.0	30.48	0.00
73	1	0.0	22.86	0.00
74	1	10.0	22.86	0.00
75	1	0.0	15.24	0.00
76	1	10.0	15.24	0.00
77	1	0.0	7.62	0.00
78	1	10.0	7.62	0.00
79	1	0.0	0.00	0.00

```
   80     1          10.0          0.00          0.00
    1     1     3     4     2     1
    2     3     5     6     4     1
    3     5     7     8     6     1
    4     7     9    10     8     1
    5     9    11    12    10     1
    6    11    13    14    12     1
    7    13    15    16    14     1
    8    15    17    18    16     1
    9    17    19    20    18     1
   10    19    21    22    20     1
   11    21    23    24    22     1
   12    23    25    26    24     1
   13    25    27    28    26     1
   14    27    29    30    28     1
   15    29    31    32    30     1
   16    31    33    34    32     2
   17    33    35    36    34     2
   18    35    37    38    36     2
   19    37    39    40    38     2
   20    39    41    42    40     2
   21    41    43    44    42     2
   22    43    45    46    44     3
   23    45    47    48    46     3
   24    47    49    50    48     3
   25    49    51    52    50     3
   26    51    53    54    52     3
   27    53    55    56    54     3
   28    55    57    58    56     3
   29    57    59    60    58     3
   30    59    61    62    60     3
   31    61    63    64    62     3
   32    63    65    66    64     3
   33    65    67    68    66     3
   34    67    69    70    68     3
   35    69    71    72    70     3
   36    71    73    74    72     3
   37    73    75    76    74     3
   38    75    77    78    76     3
   39    77    79    80    78     3
END
```

```
RESTART RK2.DAT// ROCKER DAY 90 to 180: BARE SOIL EVAPORATION
    2    0
   20  1.00E+01  2.16E+04  1.20E+00 1.555E+07  1.00E+00  0.00E+00  0.00E+00   40
 -3.22E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   51    0  0.00E+00
   52    0  0.00E+00
   53    0  0.00E+00
   54    0  0.00E+00
   55    0  0.00E+00
   56    0  0.00E+00
   57    0  0.00E+00
   58    0  0.00E+00
   59    0  0.00E+00
   60    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RK3.DAT// ROCKER DAY 90 to 180: EVAPOTRANSPIRATION
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 1.555E+07  1.00E+00  0.00E+00  0.00E+00   40
 -3.22E-07 -1.50E+04  1.00E-01
    1 -2.90E-06
  2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
  1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E-00  1.00E-00  1.00E-00
  1.00E-00  1.00E-00  1.00E-00  1.00E-00
   51    0  0.00E+00
   52    0  0.00E+00
   53    0  0.00E+00
   54    0  0.00E+00
   55    0  0.00E+00
   56    0  0.00E+00
   57    0  0.00E+00
   58    0  0.00E+00
   59    0  0.00E+00
   60    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RK4.DAT// ROCKER DAY 90 to 180: DRAINDOWN
     2     0
    20  2.16E+04  2.16E+04  2.00E+00 1.555E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
     0  0.00E+00
    51     0  0.00E+00
    52     0  0.00E+00
    53     0  0.00E+00
    54     0  0.00E+00
    55     0  0.00E+00
    56     0  0.00E+00
    57     0  0.00E+00
    58     0  0.00E+00
    59     0  0.00E+00
    60     0  0.00E+00
    61     0  0.00E+00
    62     0  0.00E+00
    63     0  0.00E+00
    64     0  0.00E+00
    65     0  0.00E+00
    66     0  0.00E+00
    67     0  0.00E+00
    68     0  0.00E+00
    69     0  0.00E+00
    70     0  0.00E+00
    71     0  0.00E+00
    72     0  0.00E+00
    73     0  0.00E+00
    74     0  0.00E+00
    75     0  0.00E+00
    76     0  0.00E+00
    77     0  0.00E+00
    78     0  0.00E+00
    79     0  0.00E+00
    80     0  0.00E+00

END
```

```
RESTART RK5.DAT// ROCKER DAY 180 to 360: BARE SOIL EVAPORATION
     2    0
    20  1.00E+01  2.16E+04  1.15E+00 3.110E+07  1.00E+00  0.00E+00  0.00E+00   40
 3.215E-07 -1.50E+04  1.00E-01
     0  0.00E+00
    51    0  0.00E+00
    52    0  0.00E+00
    53    0  0.00E+00
    54    0  0.00E+00
    55    0  0.00E+00
    56    0  0.00E+00
    57    0  0.00E+00
    58    0  0.00E+00
    59    0  0.00E+00
    60    0  0.00E+00
    61    0  0.00E+00
    62    0  0.00E+00
    63    0  0.00E+00
    64    0  0.00E+00
    65    0  0.00E+00
    66    0  0.00E+00
    67    0  0.00E+00
    68    0  0.00E+00
    69    0  0.00E+00
    70    0  0.00E+00
    71    0  0.00E+00
    72    0  0.00E+00
    73    0  0.00E+00
    74    0  0.00E+00
    75    0  0.00E+00
    76    0  0.00E+00
    77    0  0.00E+00
    78    0  0.00E+00
    79    0  0.00E+00
    80    0  0.00E+00

END
```

```
RESTART RK6.DAT// ROCKER DAY 180 to 360: EVAPOTRANSPIRATION
     2    0
    20  1.00E+01  2.16E+04  1.15E+00 3.110E+07  1.00E+00  0.00E+00  0.00E+00   40
 3.215E-07 -1.50E+04  1.00E-01
     0  0.00E+00
    51     0  0.00E+00
    52     0  0.00E+00
    53     0  0.00E+00
    54     0  0.00E+00
    55     0  0.00E+00
    56     0  0.00E+00
    57     0  0.00E+00
    58     0  0.00E+00
    59     0  0.00E+00
    60     0  0.00E+00
    61     0  0.00E+00
    62     0  0.00E+00
    63     0  0.00E+00
    64     0  0.00E+00
    65     0  0.00E+00
    66     0  0.00E+00
    67     0  0.00E+00
    68     0  0.00E+00
    69     0  0.00E+00
    70     0  0.00E+00
    71     0  0.00E+00
    72     0  0.00E+00
    73     0  0.00E+00
    74     0  0.00E+00
    75     0  0.00E+00
    76     0  0.00E+00
    77     0  0.00E+00
    78     0  0.00E+00
    79     0  0.00E+00
    80     0  0.00E+00

END
```

```
RESTART RK7.DAT// ROCKER DAY 180 to 360: DRAINDOWN
    2    0
   20  1.00E+01  2.16E+04  2.00E+00 3.110E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
    0  0.00E+00
   51    0  0.00E+00
   52    0  0.00E+00
   53    0  0.00E+00
   54    0  0.00E+00
   55    0  0.00E+00
   56    0  0.00E+00
   57    0  0.00E+00
   58    0  0.00E+00
   59    0  0.00E+00
   60    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RK8.DAT// ROCKER DAY 360 to 450: BARE SOIL EVAPORATION
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
 1.286E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   51    0  0.00E+00
   52    0  0.00E+00
   53    0  0.00E+00
   54    0  0.00E+00
   55    0  0.00E+00
   56    0  0.00E+00
   57    0  0.00E+00
   58    0  0.00E+00
   59    0  0.00E+00
   60    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RK9.DAT// ROCKER DAY 360 to 450: EVAPOTRANSPIRATION
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
 1.286E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   51    0  0.00E+00
   52    0  0.00E+00
   53    0  0.00E+00
   54    0  0.00E+00
   55    0  0.00E+00
   56    0  0.00E+00
   57    0  0.00E+00
   58    0  0.00E+00
   59    0  0.00E+00
   60    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RK10.DAT// ROCKER DAY 360 to 450: DRAINDOWN
     2     0
    20  2.16E+04  2.16E+04  2.00E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
     0  0.00E+00
    51     0  0.00E+00
    52     0  0.00E+00
    53     0  0.00E+00
    54     0  0.00E+00
    55     0  0.00E+00
    56     0  0.00E+00
    57     0  0.00E+00
    58     0  0.00E+00
    59     0  0.00E+00
    60     0  0.00E+00
    61     0  0.00E+00
    62     0  0.00E+00
    63     0  0.00E+00
    64     0  0.00E+00
    65     0  0.00E+00
    66     0  0.00E+00
    67     0  0.00E+00
    68     0  0.00E+00
    69     0  0.00E+00
    70     0  0.00E+00
    71     0  0.00E+00
    72     0  0.00E+00
    73     0  0.00E+00
    74     0  0.00E+00
    75     0  0.00E+00
    76     0  0.00E+00
    77     0  0.00E+00
    78     0  0.00E+00
    79     0  0.00E+00
    80     0  0.00E+00

END
```

RK01.DAT OUTPUT FILE

TIME STEP NO. = 370
TOTAL TIME = .77760E+07
TIME INTERVAL = .23850E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.16581E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-137.10830	1	106.73170
10.00	243.84	-137.10880	2	106.73120
.00	242.57	-135.83840	3	106.73160
10.00	242.57	-135.83890	4	106.73120
.00	241.30	-134.56850	5	106.73150
10.00	241.30	-134.56890	6	106.73110
.00	240.03	-133.29860	7	106.73140
10.00	240.03	-133.29900	8	106.73100
.00	238.76	-132.02880	9	106.73120
10.00	238.76	-132.02910	10	106.73090
.00	236.22	-129.48920	11	106.73080
10.00	236.22	-129.48940	12	106.73060
.00	233.68	-126.94970	13	106.73030
10.00	233.68	-126.94990	14	106.73010
.00	231.14	-124.41030	15	106.72970
10.00	231.14	-124.41040	16	106.72960
.00	228.60	-121.87100	17	106.72900
10.00	228.60	-121.87110	18	106.72890
.00	224.79	-118.06210	19	106.72790
10.00	224.79	-118.06210	20	106.72790
.00	220.98	-114.25330	21	106.72670
10.00	220.98	-114.25320	22	106.72680
.00	213.36	-106.63570	23	106.72430
10.00	213.36	-106.63560	24	106.72440
.00	205.74	-99.01810	25	106.72190
10.00	205.74	-99.01789	26	106.72210
.00	198.12	-91.40019	27	106.71980
10.00	198.12	-91.39998	28	106.72000
.00	190.50	-83.78198	29	106.71800
10.00	190.50	-83.78176	30	106.71820
.00	182.88	-76.16340	31	106.71660
10.00	182.88	-76.16319	32	106.71680
.00	175.26	-68.55583	33	106.70420
10.00	175.26	-68.55544	34	106.70460
.00	167.64	-60.94530	35	106.69470
10.00	167.64	-60.94491	36	106.69510
.00	160.02	-53.33188	37	106.68810
10.00	160.02	-53.33158	38	106.68840
.00	152.40	-45.71604	39	106.68400
10.00	152.40	-45.71585	40	106.68410
.00	144.78	-38.09842	41	106.68160
10.00	144.78	-38.09834	42	106.68170
.00	137.16	-30.47963	43	106.68040
10.00	137.16	-30.47963	44	106.68040
.00	129.54	-22.85981	45	106.68020
10.00	129.54	-22.85980	46	106.68020
.00	121.92	-15.23992	47	106.68010
10.00	121.92	-15.23991	48	106.68010
.00	114.30	-7.61998	49	106.68000
10.00	114.30	-7.61998	50	106.68000
.00	106.68	.00000	51	106.68000
10.00	106.68	.00000	52	106.68000
.00	99.06	.00000	53	99.06001
10.00	99.06	.00000	54	99.06001
.00	91.44	.00000	55	91.44001
10.00	91.44	.00000	56	91.44001

.00	83.82	.00000	57	83.82000
10.00	83.82	.00000	58	83.82000
.00	76.20	.00000	59	76.20000
10.00	76.20	.00000	60	76.20000
.00	68.58	.00000	61	68.58000
10.00	68.58	.00000	62	68.58000
.00	60.96	.00000	63	60.96000
10.00	60.96	.00000	64	60.96000
.00	53.34	.00000	65	53.34000
10.00	53.34	.00000	66	53.34000
.00	45.72	.00000	67	45.72000
10.00	45.72	.00000	68	45.72000
.00	38.10	.00000	69	38.10000
10.00	38.10	.00000	70	38.10000
.00	30.48	.00000	71	30.48000
10.00	30.48	.00000	72	30.48000
.00	22.86	.00000	73	22.86000
10.00	22.86	.00000	74	22.86000
.00	15.24	.00000	75	15.24000
10.00	15.24	.00000	76	15.24000
.00	7.62	.00000	77	7.62000
10.00	7.62	.00000	78	7.62000
.00	.00	.00000	79	.00000
10.00	.00	.00000	80	.00000

RK02.DAT OUTPUT FILE

TIME STEP NO. = 774
TOTAL TIME = .15550E+08
TIME INTERVAL = .21241E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.20786E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1020.88500	3	-778.31460
10.00	242.57	-889.82120	4	-647.25110
.00	241.30	-522.26590	5	-280.96590
10.00	241.30	-435.71360	6	-194.41360
.00	240.03	-391.24140	7	-151.21140
10.00	240.03	-336.10080	8	-96.07081
.00	238.76	-330.00640	9	-91.24639
10.00	238.76	-293.59520	10	-54.83519
.00	236.22	-273.88650	11	-37.66647
10.00	236.22	-250.88940	12	-14.66942
.00	233.68	-241.76570	13	-8.08571
10.00	233.68	-226.73810	14	6.94192
.00	231.14	-220.26990	15	10.87007
10.00	231.14	-210.24630	16	20.89374
.00	228.60	-204.46460	17	24.13535
10.00	228.60	-197.77390	18	30.82610
.00	224.79	-187.21340	19	37.57657
10.00	224.79	-183.22240	20	41.56756
.00	220.98	-174.03750	21	46.94247
10.00	220.98	-171.80010	22	49.17990
.00	213.36	-155.14060	23	58.21938
10.00	213.36	-153.97590	24	59.38411
.00	205.74	-140.68560	25	65.05438
10.00	205.74	-140.09120	26	65.64883
.00	198.12	-128.71590	27	69.40407
10.00	198.12	-128.42220	28	69.69777
.00	190.50	-118.25950	29	72.24052
10.00	190.50	-118.12500	30	72.37498
.00	182.88	-108.77390	31	74.10610
10.00	182.88	-108.72500	32	74.15497
.00	175.26	-93.23416	33	82.02585
10.00	175.26	-93.12282	34	82.13718
.00	167.64	-81.04914	35	86.59087
10.00	167.64	-80.97756	36	86.66245
.00	160.02	-70.75217	37	89.26784
10.00	160.02	-70.71765	38	89.30235
.00	152.40	-61.58112	39	90.81889
10.00	152.40	-61.56732	40	90.83268
.00	144.78	-53.09657	41	91.68343
10.00	144.78	-53.09094	42	91.68906
.00	137.16	-45.02702	43	92.13299
10.00	137.16	-45.02251	44	92.13750
.00	129.54	-37.36528	45	92.17472
10.00	129.54	-37.36268	46	92.17733
.00	121.92	-29.72399	47	92.19600
10.00	121.92	-29.72234	48	92.19767
.00	114.30	-22.09447	49	92.20554
10.00	114.30	-22.09335	50	92.20665
.00	106.68	-14.47097	51	92.20904
10.00	106.68	-14.47022	52	92.20978
.00	99.06	-6.85008	53	92.20993
10.00	99.06	-6.84960	54	92.21041
.00	91.44	.77004	55	92.21005
10.00	91.44	.77033	56	92.21035

.00	83.82	8.39009	57	92.21010
10.00	83.82	8.39027	58	92.21028
.00	76.20	16.01012	59	92.21012
10.00	76.20	16.01023	60	92.21023
.00	68.58	23.63012	61	92.21013
10.00	68.58	23.63019	62	92.21020
.00	60.96	31.25013	63	92.21014
10.00	60.96	31.25018	64	92.21018
.00	53.34	38.87012	65	92.21013
10.00	53.34	38.87016	66	92.21016
.00	45.72	46.49012	67	92.21012
10.00	45.72	46.49014	68	92.21014
.00	38.10	54.11011	69	92.21012
10.00	38.10	54.11013	70	92.21014
.00	30.48	61.73010	71	92.21011
10.00	30.48	61.73011	72	92.21011
.00	22.86	69.35008	73	92.21009
10.00	22.86	69.35009	74	92.21010
.00	15.24	76.97008	75	92.21008
10.00	15.24	76.97009	76	92.21009
.00	7.62	84.59008	77	92.21008
10.00	7.62	84.59010	78	92.21010
.00	.00	92.21007	79	92.21007
10.00	.00	92.21009	80	92.21009

TIME STEP NO. = 731
TOTAL TIME = .15550E+08
TIME INTERVAL = .66390E+04
CUMULATIVE INFLOW INTO THE SYSTEM = -.34768E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-5253.98200	3	-5011.41200
10.00	242.57	-5032.01800	4	-4789.44800
.00	241.30	-4071.57600	5	-3830.27600
10.00	241.30	-4081.44400	6	-3840.14400
.00	240.03	-3854.71900	7	-3614.68900
10.00	240.03	-3920.85100	8	-3680.82100
.00	238.76	-3744.37800	9	-3505.61800
10.00	238.76	-3944.78300	10	-3706.02200
.00	236.22	-3817.32200	11	-3581.10200
10.00	236.22	-3849.56300	12	-3613.34300
.00	233.68	-3464.00100	13	-3230.32100
10.00	233.68	-3593.38700	14	-3359.70700
.00	231.14	-2792.59300	15	-2561.45400
10.00	231.14	-2860.19800	16	-2629.05800
.00	228.60	-2485.31400	17	-2256.71400
10.00	228.60	-2610.64900	18	-2382.04900
.00	224.79	-2177.28100	19	-1952.49100
10.00	224.79	-2216.14500	20	-1991.35500
.00	220.98	-2049.68900	21	-1828.70900
10.00	220.98	-2183.76800	22	-1962.78800
.00	213.36	-2019.10100	23	-1805.74100
10.00	213.36	-2051.74300	24	-1838.38300
.00	205.74	-1772.08100	25	-1566.34100
10.00	205.74	-1805.32300	26	-1599.58300
.00	198.12	-1733.97700	27	-1535.85700
10.00	198.12	-1748.62500	28	-1550.50500
.00	190.50	-1787.45600	29	-1596.95600
10.00	190.50	-1790.35600	30	-1599.85600
.00	182.88	-1367.45600	31	-1184.57600
10.00	182.88	-1526.78900	32	-1343.90900
.00	175.26	-1140.30900	33	-965.04920
10.00	175.26	-1164.54700	34	-989.28690
.00	167.64	-1104.89400	35	-937.25380
10.00	167.64	-1113.53500	36	-945.89510
.00	160.02	-793.46340	37	-633.44340
10.00	160.02	-1115.28800	38	-955.26810
.00	152.40	-254.04840	39	-101.64840
10.00	152.40	-278.01640	40	-125.61640
.00	144.78	-131.77650	41	13.00354
10.00	144.78	-130.45520	42	14.32477
.00	137.16	-93.82194	43	43.33806
10.00	137.16	-93.09283	44	44.06718
.00	129.54	-84.43364	45	45.10636
10.00	129.54	-84.06210	46	45.47789
.00	121.92	-75.62818	47	46.29182
10.00	121.92	-75.44034	48	46.47966
.00	114.30	-67.22579	49	47.07422
10.00	114.30	-67.13160	50	47.16840
.00	106.68	-59.10261	51	47.57739
10.00	106.68	-59.05552	52	47.62448
.00	99.06	-51.17089	53	47.88913
10.00	99.06	-51.14706	54	47.91295
.00	91.44	-43.36739	55	48.07262
10.00	91.44	-43.35482	56	48.08519

.00	83.82	-35.64661	57	48.17339
10.00	83.82	-35.63946	58	48.18054
.00	76.20	-27.97628	59	48.22371
10.00	76.20	-27.97183	60	48.22816
.00	68.58	-20.33432	61	48.24568
10.00	68.58	-20.33139	62	48.24861
.00	60.96	-12.70651	63	48.25349
10.00	60.96	-12.70458	64	48.25542
.00	53.34	-5.08456	65	48.25544
10.00	53.34	-5.08332	66	48.25668
.00	45.72	2.53577	67	48.25577
10.00	45.72	2.53654	68	48.25654
.00	38.10	10.15591	69	48.25591
10.00	38.10	10.15639	70	48.25639
.00	30.48	17.77600	71	48.25600
10.00	30.48	17.77630	72	48.25629
.00	22.86	25.39605	73	48.25604
10.00	22.86	25.39624	74	48.25623
.00	15.24	33.01608	75	48.25607
10.00	15.24	33.01620	76	48.25620
.00	7.62	40.63609	77	48.25609
10.00	7.62	40.63619	78	48.25619
.00	.00	48.25609	79	48.25609
10.00	.00	48.25618	80	48.25618

RK04.DAT OUTPUT FILE

TIME STEP NO. = 730
TOTAL TIME = .15550E+08
TIME INTERVAL = .19599E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.16581E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-137.25050	1	106.58950
10.00	243.84	-137.25050	2	106.58950
.00	242.57	-135.98050	3	106.58950
10.00	242.57	-135.98050	4	106.58950
.00	241.30	-134.71060	5	106.58940
10.00	241.30	-134.71060	6	106.58940
.00	240.03	-133.44070	7	106.58930
10.00	240.03	-133.44060	8	106.58940
.00	238.76	-132.17070	9	106.58930
10.00	238.76	-132.17070	10	106.58930
.00	236.22	-129.63090	11	106.58910
10.00	236.22	-129.63080	12	106.58920
.00	233.68	-127.09110	13	106.58890
10.00	233.68	-127.09100	14	106.58900
.00	231.14	-124.55130	15	106.58870
10.00	231.14	-124.55120	16	106.58880
.00	228.60	-122.01150	17	106.58850
10.00	228.60	-122.01140	18	106.58860
.00	224.79	-118.20180	19	106.58820
10.00	224.79	-118.20170	20	106.58830
.00	220.98	-114.39220	21	106.58780
10.00	220.98	-114.39210	22	106.58790
.00	213.36	-106.77300	23	106.58700
10.00	213.36	-106.77290	24	106.58710
.00	205.74	-99.15384	25	106.58620
10.00	205.74	-99.15377	26	106.58620
.00	198.12	-91.53460	27	106.58540
10.00	198.12	-91.53452	28	106.58550
.00	190.50	-83.91529	29	106.58470
10.00	190.50	-83.91520	30	106.58480
.00	182.88	-76.29585	31	106.58420
10.00	182.88	-76.29577	32	106.58420
.00	175.26	-68.68089	33	106.57910
10.00	175.26	-68.68066	34	106.57930
.00	167.64	-61.06509	35	106.57490
10.00	167.64	-61.06482	36	106.57520
.00	160.02	-53.44843	37	106.57160
10.00	160.02	-53.44819	38	106.57180
.00	152.40	-45.83095	39	106.56900
10.00	152.40	-45.83075	40	106.56920
.00	144.78	-38.21276	41	106.56720
10.00	144.78	-38.21263	42	106.56740
.00	137.16	-30.59398	43	106.56600
10.00	137.16	-30.59393	44	106.56610
.00	129.54	-22.97420	45	106.56580
10.00	129.54	-22.97417	46	106.56580
.00	121.92	-15.35438	47	106.56560
10.00	121.92	-15.35436	48	106.56560
.00	114.30	-7.73449	49	106.56550
10.00	114.30	-7.73449	50	106.56550
.00	106.68	-.11454	51	106.56540
10.00	106.68	-.11455	52	106.56540
.00	99.06	7.50540	53	106.56540
10.00	99.06	7.50540	54	106.56540
.00	91.44	15.12537	55	106.56540
10.00	91.44	15.12537	56	106.56540

.00	83.82	22.74534	57	106.56530
10.00	83.82	22.74534	58	106.56530
.00	76.20	30.36530	59	106.56530
10.00	76.20	30.36530	60	106.56530
.00	68.58	37.98526	61	106.56530
10.00	68.58	37.98526	62	106.56530
.00	60.96	45.60523	63	106.56520
10.00	60.96	45.60523	64	106.56520
.00	53.34	53.22519	65	106.56520
10.00	53.34	53.22518	66	106.56520
.00	45.72	60.84515	67	106.56520
10.00	45.72	60.84515	68	106.56520
.00	38.10	68.46512	69	106.56510
10.00	38.10	68.46512	70	106.56510
.00	30.48	76.08508	71	106.56510
10.00	30.48	76.08508	72	106.56510
.00	22.86	83.70506	73	106.56510
10.00	22.86	83.70505	74	106.56500
.00	15.24	91.32505	75	106.56500
10.00	15.24	91.32503	76	106.56500
.00	7.62	98.94503	77	106.56500
10.00	7.62	98.94503	78	106.56500
.00	.00	106.56500	79	106.56500
10.00	.00	106.56500	80	106.56500

RK05.DAT OUTPUT FILE

TIME STEP NO. = 1545
TOTAL TIME = .31100E+08
TIME INTERVAL = .25610E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.15786E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-122.04550	1	121.79450
10.00	243.84	-121.89370	2	121.94620
.00	242.57	-121.22230	3	121.34780
10.00	242.57	-121.07410	4	121.49590
.00	241.30	-120.38480	5	120.91520
10.00	241.30	-120.23920	6	121.06080
.00	240.03	-119.53330	7	120.49670
10.00	240.03	-119.38940	8	120.64060
.00	238.76	-118.66780	9	120.09220
10.00	238.76	-118.52480	10	120.23520
.00	236.22	-116.89030	11	119.32970
10.00	236.22	-116.75600	12	119.46400
.00	233.68	-115.05900	13	118.62100
10.00	233.68	-114.93020	14	118.74980
.00	231.14	-113.17540	15	117.96460
10.00	231.14	-113.04920	16	118.09080
.00	228.60	-111.24130	17	117.35870
10.00	228.60	-111.11500	18	117.48500
.00	224.79	-108.24220	19	116.54780
10.00	224.79	-108.12330	20	116.66670
.00	220.98	-105.14140	21	115.83860
10.00	220.98	-105.02420	22	115.95580
.00	213.36	-98.62295	23	114.73710
10.00	213.36	-98.55238	24	114.80760
.00	205.74	-91.79544	25	113.94460
10.00	205.74	-91.75380	26	113.98620
.00	198.12	-84.72223	27	113.39780
10.00	198.12	-84.69908	28	113.42090
.00	190.50	-77.46259	29	113.03740
10.00	190.50	-77.45180	30	113.04820
.00	182.88	-70.06805	31	112.81190
10.00	182.88	-70.06606	32	112.81390
.00	175.26	-64.22342	33	111.03660
10.00	175.26	-64.19811	34	111.06190
.00	167.64	-57.79422	35	109.84580
10.00	167.64	-57.76782	36	109.87220
.00	160.02	-50.90756	37	109.11240
10.00	160.02	-50.88897	38	109.13100
.00	152.40	-43.69370	39	108.70630
10.00	152.40	-43.68427	40	108.71570
.00	144.78	-36.26904	41	108.51100
10.00	144.78	-36.26671	42	108.51330
.00	137.16	-28.72533	43	108.43470
10.00	137.16	-28.72714	44	108.43290
.00	129.54	-21.11426	45	108.42570
10.00	129.54	-21.11541	46	108.42460
.00	121.92	-13.49757	47	108.42240
10.00	121.92	-13.49831	48	108.42170
.00	114.30	-5.87847	49	108.42150
10.00	114.30	-5.87894	50	108.42110
.00	106.68	1.74137	51	108.42140
10.00	106.68	1.74107	52	108.42110
.00	99.06	9.36127	53	108.42130
10.00	99.06	9.36108	54	108.42110
.00	91.44	16.98121	55	108.42120
10.00	91.44	16.98110	56	108.42110

.00	83.82	24.60117	57	108.42120
10.00	83.82	24.60110	58	108.42110
.00	76.20	32.22113	59	108.42110
10.00	76.20	32.22109	60	108.42110
.00	68.58	39.84109	61	108.42110
10.00	68.58	39.84107	62	108.42110
.00	60.96	47.46107	63	108.42110
10.00	60.96	47.46106	64	108.42100
.00	53.34	55.08105	65	108.42100
10.00	53.34	55.08103	66	108.42100
.00	45.72	62.70102	67	108.42100
10.00	45.72	62.70102	68	108.42100
.00	38.10	70.32101	69	108.42100
10.00	38.10	70.32100	70	108.42100
.00	30.48	77.94099	71	108.42100
10.00	30.48	77.94098	72	108.42100
.00	22.86	85.56097	73	108.42100
10.00	22.86	85.56096	74	108.42100
.00	15.24	93.18096	75	108.42100
10.00	15.24	93.18094	76	108.42090
.00	7.62	100.80090	77	108.42090
10.00	7.62	100.80090	78	108.42090
.00	.00	108.42090	79	108.42090
10.00	.00	108.42090	80	108.42090

RK06.DAT OUTPUT FILE

TIME STEP NO. = 1506
TOTAL TIME = .31100E+08
TIME INTERVAL = .98860E+04
CUMULATIVE INFLOW INTO THE SYSTEM = -.29767E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-137.66140	1	106.17860
10.00	243.84	-137.48660	2	106.35340
.00	242.57	-137.18430	3	105.38570
10.00	242.57	-137.01180	4	105.55820
.00	241.30	-136.69410	5	104.60590
10.00	241.30	-136.52300	6	104.77700
.00	240.03	-136.19070	7	103.83930
10.00	240.03	-136.01990	8	104.01010
.00	238.76	-135.67390	9	103.08610
10.00	238.76	-135.50240	10	103.25750
.00	236.22	-134.59410	11	101.62590
10.00	236.22	-134.42810	12	101.79190
.00	233.68	-133.45830	13	100.22170
10.00	233.68	-133.29440	14	100.38560
.00	231.14	-132.26530	15	98.87467
10.00	231.14	-132.10040	16	99.03960
.00	228.60	-131.01440	17	97.58563
10.00	228.60	-130.84530	18	97.75470
.00	224.79	-129.01880	19	95.77120
10.00	224.79	-128.85300	20	95.93700
.00	220.98	-126.88950	21	94.09045
10.00	220.98	-126.72080	22	94.25920
.00	213.36	-122.17040	23	91.18963
10.00	213.36	-122.06890	24	91.29115
.00	205.74	-116.92510	25	88.81490
10.00	205.74	-116.88100	26	88.85897
.00	198.12	-111.18650	27	86.93347
10.00	198.12	-111.19880	28	86.92124
.00	190.50	-105.00450	29	85.49551
10.00	190.50	-105.07870	30	85.42131
.00	182.88	-98.43960	31	84.44041
10.00	182.88	-98.58776	32	84.29225
.00	175.26	-98.45191	33	76.80808
10.00	175.26	-98.51330	34	76.74670
.00	167.64	-98.26095	35	69.37905
10.00	167.64	-98.26090	36	69.37911
.00	160.02	-97.80117	37	62.21883
10.00	160.02	-97.75913	38	62.26088
.00	152.40	-96.99673	39	55.40327
10.00	152.40	-96.92994	40	55.47006
.00	144.78	-95.76461	41	49.01539
10.00	144.78	-95.69125	42	49.08876
.00	137.16	-94.01916	43	43.14085
10.00	137.16	-93.96094	44	43.19907
.00	129.54	-86.87211	45	42.66788
10.00	129.54	-86.83900	46	42.70100
.00	121.92	-79.60445	47	42.31554
10.00	121.92	-79.58571	48	42.33428
.00	114.30	-72.23874	49	42.06126
10.00	114.30	-72.22829	50	42.07171
.00	106.68	-64.79575	51	41.88425
10.00	106.68	-64.79012	52	41.88988
.00	99.06	-57.29394	53	41.76608
10.00	99.06	-57.29115	54	41.76887
.00	91.44	-49.74895	55	41.69106
10.00	91.44	-49.74781	56	41.69219

.00	83.82	-42.17371	57	41.64628
10.00	83.82	-42.17351	58	41.64649
.00	76.20	-34.57843	59	41.62157
10.00	76.20	-34.57871	60	41.62129
.00	68.58	-26.97073	61	41.60927
10.00	68.58	-26.97121	62	41.60880
.00	60.96	-19.35604	63	41.60397
10.00	60.96	-19.35651	64	41.60348
.00	53.34	-11.73788	65	41.60212
10.00	53.34	-11.73826	66	41.60173
.00	45.72	-4.11832	67	41.60168
10.00	45.72	-4.11860	68	41.60140
.00	38.10	3.50160	69	41.60160
10.00	38.10	3.50142	70	41.60142
.00	30.48	11.12156	71	41.60156
10.00	30.48	11.12145	72	41.60145
.00	22.86	18.74153	73	41.60153
10.00	22.86	18.74146	74	41.60146
.00	15.24	26.36152	75	41.60151
10.00	15.24	26.36147	76	41.60147
.00	7.62	33.98151	77	41.60151
10.00	7.62	33.98147	78	41.60147
.00	.00	41.60151	79	41.60151
10.00	.00	41.60148	80	41.60148

TIME STEP NO. = 1460
TOTAL TIME = .31100E+08
TIME INTERVAL = .21848E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.16581E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-137.48540	1	106.35460
10.00	243.84	-137.48510	2	106.35490
.00	242.57	-136.21540	3	106.35460
10.00	242.57	-136.21510	4	106.35490
.00	241.30	-134.94540	5	106.35460
10.00	241.30	-134.94510	6	106.35490
.00	240.03	-133.67540	7	106.35460
10.00	240.03	-133.67510	8	106.35490
.00	238.76	-132.40540	9	106.35460
10.00	238.76	-132.40520	10	106.35480
.00	236.22	-129.86550	11	106.35450
10.00	236.22	-129.86530	12	106.35470
.00	233.68	-127.32560	13	106.35440
10.00	233.68	-127.32540	14	106.35460
.00	231.14	-124.78570	15	106.35430
10.00	231.14	-124.78560	16	106.35440
.00	228.60	-122.24590	17	106.35410
10.00	228.60	-122.24570	18	106.35430
.00	224.79	-118.43610	19	106.35380
10.00	224.79	-118.43600	20	106.35400
.00	220.98	-114.62650	21	106.35350
10.00	220.98	-114.62640	22	106.35360
.00	213.36	-107.00730	23	106.35270
10.00	213.36	-107.00720	24	106.35280
.00	205.74	-99.38806	25	106.35190
10.00	205.74	-99.38796	26	106.35210
.00	198.12	-91.76877	27	106.35120
10.00	198.12	-91.76867	28	106.35130
.00	190.50	-84.14940	29	106.35060
10.00	190.50	-84.14931	30	106.35070
.00	182.88	-76.52995	31	106.35010
10.00	182.88	-76.52986	32	106.35010
.00	175.26	-68.91482	33	106.34520
10.00	175.26	-68.91458	34	106.34540
.00	167.64	-61.29891	35	106.34110
10.00	167.64	-61.29863	36	106.34140
.00	160.02	-53.68220	37	106.33780
10.00	160.02	-53.68195	38	106.33810
.00	152.40	-46.06466	39	106.33530
10.00	152.40	-46.06448	40	106.33550
.00	144.78	-38.44639	41	106.33360
10.00	144.78	-38.44629	42	106.33370
.00	137.16	-30.82749	43	106.33250
10.00	137.16	-30.82746	44	106.33260
.00	129.54	-23.20767	45	106.33230
10.00	129.54	-23.20765	46	106.33230
.00	121.92	-15.58781	47	106.33220
10.00	121.92	-15.58779	48	106.33220
.00	114.30	-7.96789	49	106.33210
10.00	114.30	-7.96789	50	106.33210
.00	106.68	-.34793	51	106.33210
10.00	106.68	-.34793	52	106.33210
.00	99.06	7.27202	53	106.33200
10.00	99.06	7.27202	54	106.33200
.00	91.44	14.89200	55	106.33200
10.00	91.44	14.89200	56	106.33200

.00	83.82	22.51199	57	106.33200
10.00	83.82	22.51199	58	106.33200
.00	76.20	30.13196	59	106.33200
10.00	76.20	30.13196	60	106.33200
.00	68.58	37.75193	61	106.33190
10.00	68.58	37.75193	62	106.33190
.00	60.96	45.37191	63	106.33190
10.00	60.96	45.37192	64	106.33190
.00	53.34	52.99189	65	106.33190
10.00	53.34	52.99190	66	106.33190
.00	45.72	60.61186	67	106.33190
10.00	45.72	60.61187	68	106.33190
.00	38.10	68.23184	69	106.33180
10.00	38.10	68.23184	70	106.33180
.00	30.48	75.85181	71	106.33180
10.00	30.48	75.85181	72	106.33180
.00	22.86	83.47178	73	106.33180
10.00	22.86	83.47179	74	106.33180
.00	15.24	91.09177	75	106.33180
10.00	15.24	91.09177	76	106.33180
.00	7.62	98.71176	77	106.33180
10.00	7.62	98.71176	78	106.33180
.00	.00	106.33170	79	106.33170
10.00	.00	106.33180	80	106.33180

RK08.DAT OUTPUT FILE

TIME STEP NO. = 1905
TOTAL TIME = .38880E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.81762E+02

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-95.11804	1	148.72200
10.00	243.84	-94.90833	2	148.93170
.00	242.57	-94.40768	3	148.16230
10.00	242.57	-94.20210	4	148.36790
.00	241.30	-93.67781	5	147.62220
10.00	241.30	-93.47517	6	147.82480
.00	240.03	-92.92846	7	147.10150
10.00	240.03	-92.72762	8	147.30240
.00	238.76	-92.15970	9	146.60030
10.00	238.76	-91.95952	10	146.80050
.00	236.22	-90.55670	11	145.66330
10.00	236.22	-90.36779	12	145.85220
.00	233.68	-88.87748	13	144.80250
10.00	233.68	-88.69587	14	144.98410
.00	231.14	-87.12385	15	144.01620
10.00	231.14	-86.94588	16	144.19410
.00	228.60	-85.29812	17	143.30190
10.00	228.60	-85.12042	18	143.47960
.00	224.79	-82.41964	19	142.37040
10.00	224.79	-82.25339	20	142.53660
.00	220.98	-79.39714	21	141.58290
10.00	220.98	-79.23521	22	141.74480
.00	213.36	-72.90995	23	140.45000
10.00	213.36	-72.81536	24	140.54470
.00	205.74	-66.01953	25	139.72050
10.00	205.74	-65.96543	26	139.77460
.00	198.12	-58.83696	27	139.28300
10.00	198.12	-58.80645	28	139.31350
.00	190.50	-51.45902	29	139.04100
10.00	190.50	-51.44153	30	139.05850
.00	182.88	-43.96106	31	138.91890
10.00	182.88	-43.95002	32	138.93000
.00	175.26	-37.49482	33	137.76520
10.00	175.26	-37.47102	34	137.78900
.00	167.64	-30.43150	35	137.20850
10.00	167.64	-30.41758	36	137.22240
.00	160.02	-23.02501	37	136.99500
10.00	160.02	-23.02144	38	136.99860
.00	152.40	-15.46291	39	136.93710
10.00	152.40	-15.46402	40	136.93600
.00	144.78	-7.85148	41	136.92850
10.00	144.78	-7.85327	42	136.92670
.00	137.16	-.23187	43	136.92810
10.00	137.16	-.23347	44	136.92650
.00	129.54	7.38776	45	136.92770
10.00	129.54	7.38677	46	136.92680
.00	121.92	15.00750	47	136.92750
10.00	121.92	15.00689	48	136.92690
.00	114.30	22.62732	49	136.92730
10.00	114.30	22.62694	50	136.92690
.00	106.68	30.24719	51	136.92720
10.00	106.68	30.24696	52	136.92700
.00	99.06	37.86706	53	136.92710
10.00	99.06	37.86692	54	136.92690
.00	91.44	45.48699	55	136.92700
10.00	91.44	45.48690	56	136.92690

.00	83.82	53.10692	57	136.92690
10.00	83.82	53.10687	58	136.92690
.00	76.20	60.72686	59	136.92690
10.00	76.20	60.72682	60	136.92680
.00	68.58	68.34680	61	136.92680
10.00	68.58	68.34678	62	136.92680
.00	60.96	75.96675	63	136.92680
10.00	60.96	75.96673	64	136.92670
.00	53.34	83.58671	65	136.92670
10.00	53.34	83.58670	66	136.92670
.00	45.72	91.20666	67	136.92670
10.00	45.72	91.20666	68	136.92670
.00	38.10	98.82662	69	136.92660
10.00	38.10	98.82662	70	136.92660
.00	30.48	106.44660	71	136.92660
10.00	30.48	106.44660	72	136.92660
.00	22.86	114.06650	73	136.92650
10.00	22.86	114.06660	74	136.92650
.00	15.24	121.68650	75	136.92650
10.00	15.24	121.68650	76	136.92650
.00	7.62	129.30650	77	136.92650
10.00	7.62	129.30650	78	136.92650
.00	.00	136.92650	79	136.92650
10.00	.00	136.92650	80	136.92650

TIME STEP NO. = 1866
TOTAL TIME = .38880E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.21872E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-104.64150	1	139.19850
10.00	243.84	-104.42280	2	139.41720
.00	242.57	-104.25190	3	138.31800
10.00	242.57	-104.03480	4	138.53520
.00	241.30	-103.84740	5	137.45260
10.00	241.30	-103.63070	6	137.66930
.00	240.03	-103.42760	7	136.60240
10.00	240.03	-103.21000	8	136.82000
.00	238.76	-102.99210	9	135.76790
10.00	238.76	-102.77250	10	135.98750
.00	236.22	-102.06620	11	134.15380
10.00	236.22	-101.85050	12	134.36950
.00	233.68	-101.07270	13	132.60720
10.00	233.68	-100.85720	14	132.82270
.00	231.14	-100.00940	15	131.13060
10.00	231.14	-99.79025	16	131.34970
.00	228.60	-98.87382	17	129.72620
10.00	228.60	-98.64750	18	129.95250
.00	224.79	-97.01963	19	127.77040
10.00	224.79	-96.79504	20	127.99500
.00	220.98	-94.99428	21	125.98570
10.00	220.98	-94.76461	22	126.21540
.00	213.36	-90.33999	23	123.02000
10.00	213.36	-90.19862	24	123.16140
.00	205.74	-85.00632	25	120.73370
10.00	205.74	-84.94402	26	120.79600
.00	198.12	-79.05574	27	119.06430
10.00	198.12	-79.07039	28	119.04960
.00	190.50	-72.58317	29	117.91680
10.00	190.50	-72.67741	30	117.82260
.00	182.88	-65.69846	31	117.18150
10.00	182.88	-65.87914	32	117.00090
.00	175.26	-65.90086	33	109.35910
10.00	175.26	-66.02483	34	109.23520
.00	167.64	-66.13735	35	101.50260
10.00	167.64	-66.21717	36	101.42280
.00	160.02	-66.40651	37	93.61350
10.00	160.02	-66.44453	38	93.57548
.00	152.40	-66.68680	39	85.71320
10.00	152.40	-66.67727	40	85.72272
.00	144.78	-66.91635	41	77.86365
10.00	144.78	-66.84960	42	77.93040
.00	137.16	-66.95746	43	70.20254
10.00	137.16	-66.83002	44	70.32998
.00	129.54	-60.06150	45	69.47849
10.00	129.54	-59.99412	46	69.54588
.00	121.92	-52.92629	47	68.99371
10.00	121.92	-52.89274	48	69.02725
.00	114.30	-45.61076	49	68.68924
10.00	114.30	-45.59586	50	68.70415
.00	106.68	-38.16785	51	68.51214
10.00	106.68	-38.16280	52	68.51720
.00	99.06	-30.64141	53	68.41861
10.00	99.06	-30.64113	54	68.41888
.00	91.44	-23.06482	55	68.37518
10.00	91.44	-23.06643	56	68.37358

.00	83.82	-15.46152	57	68.35847
10.00	83.82	-15.46345	58	68.35654
.00	76.20	-7.84622	59	68.35378
10.00	76.20	-7.84778	60	68.35222
.00	68.58	-.22695	61	68.35305
10.00	68.58	-.22800	62	68.35200
.00	60.96	7.39282	63	68.35282
10.00	60.96	7.39216	64	68.35216
.00	53.34	15.01269	65	68.35269
10.00	53.34	15.01228	66	68.35228
.00	45.72	22.63261	67	68.35261
10.00	45.72	22.63235	68	68.35236
.00	38.10	30.25256	69	68.35256
10.00	38.10	30.25239	70	68.35239
.00	30.48	37.87252	71	68.35252
10.00	30.48	37.87241	72	68.35241
.00	22.86	45.49250	73	68.35249
10.00	22.86	45.49242	74	68.35242
.00	15.24	53.11249	75	68.35248
10.00	15.24	53.11242	76	68.35242
.00	7.62	60.73248	77	68.35248
10.00	7.62	60.73243	78	68.35243
.00	.00	68.35247	79	68.35247
10.00	.00	68.35243	80	68.35243

TIME STEP NO. = 1820
TOTAL TIME = .38880E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.16581E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-137.60080	1	106.23920
10.00	243.84	-137.60090	2	106.23910
.00	242.57	-136.33080	3	106.23920
10.00	242.57	-136.33090	4	106.23910
.00	241.30	-135.06080	5	106.23920
10.00	241.30	-135.06090	6	106.23910
.00	240.03	-133.79090	7	106.23910
10.00	240.03	-133.79100	8	106.23900
.00	238.76	-132.52090	9	106.23910
10.00	238.76	-132.52100	10	106.23890
.00	236.22	-129.98110	11	106.23890
10.00	236.22	-129.98120	12	106.23880
.00	233.68	-127.44130	13	106.23870
10.00	233.68	-127.44130	14	106.23870
.00	231.14	-124.90150	15	106.23850
10.00	231.14	-124.90150	16	106.23850
.00	228.60	-122.36180	17	106.23820
10.00	228.60	-122.36170	18	106.23830
.00	224.79	-118.55220	19	106.23780
10.00	224.79	-118.55210	20	106.23790
.00	220.98	-114.74260	21	106.23740
10.00	220.98	-114.74250	22	106.23750
.00	213.36	-107.12350	23	106.23650
10.00	213.36	-107.12340	24	106.23660
.00	205.74	-99.50442	25	106.23560
10.00	205.74	-99.50434	26	106.23570
.00	198.12	-91.88526	27	106.23470
10.00	198.12	-91.88517	28	106.23480
.00	190.50	-84.26600	29	106.23400
10.00	190.50	-84.26591	30	106.23410
.00	182.88	-76.64663	31	106.23340
10.00	182.88	-76.64654	32	106.23350
.00	175.26	-69.03220	33	106.22780
10.00	175.26	-69.03194	34	106.22810
.00	167.64	-61.41686	35	106.22310
10.00	167.64	-61.41656	36	106.22340
.00	160.02	-53.80053	37	106.21950
10.00	160.02	-53.80027	38	106.21970
.00	152.40	-46.18323	39	106.21680
10.00	152.40	-46.18302	40	106.21700
.00	144.78	-38.56511	41	106.21490
10.00	144.78	-38.56499	42	106.21500
.00	137.16	-30.94632	43	106.21370
10.00	137.16	-30.94628	44	106.21370
.00	129.54	-23.32653	45	106.21350
10.00	129.54	-23.32650	46	106.21350
.00	121.92	-15.70669	47	106.21330
10.00	121.92	-15.70667	48	106.21330
.00	114.30	-8.08679	49	106.21320
10.00	114.30	-8.08679	50	106.21320
.00	106.68	-.46684	51	106.21320
10.00	106.68	-.46684	52	106.21320
.00	99.06	7.15311	53	106.21310
10.00	99.06	7.15310	54	106.21310
.00	91.44	14.77309	55	106.21310
10.00	91.44	14.77308	56	106.21310

.00	83.82	22.39307	57	106.21310
10.00	83.82	22.39306	58	106.21310
.00	76.20	30.01304	59	106.21300
10.00	76.20	30.01303	60	106.21300
.00	68.58	37.63300	61	106.21300
10.00	68.58	37.63300	62	106.21300
.00	60.96	45.25298	63	106.21300
10.00	60.96	45.25298	64	106.21300
.00	53.34	52.87295	65	106.21290
10.00	53.34	52.87296	66	106.21300
.00	45.72	60.49293	67	106.21290
10.00	45.72	60.49294	68	106.21290
.00	38.10	68.11292	69	106.21290
10.00	38.10	68.11292	70	106.21290
.00	30.48	75.73289	71	106.21290
10.00	30.48	75.73290	72	106.21290
.00	22.86	83.35288	73	106.21290
10.00	22.86	83.35288	74	106.21290
.00	15.24	90.97287	75	106.21290
10.00	15.24	90.97287	76	106.21290
.00	7.62	98.59286	77	106.21290
10.00	7.62	98.59287	78	106.21290
.00	.00	106.21290	79	106.21290
10.00	.00	106.21290	80	106.21290

APPENDIX E2.2

ROCKER CAPILLARY RISE

ROCKER - CAPPILLARITY SCENARIO
EVAPORATION FROM HIGH GROUNDWATER

Several simulations were conducted of bare soil evaporation with groundwater fixed at different levels. The quantity of actual surface evaporation indicates the potential for upward flux from groundwater to occur.

RK11.DAT	DAY 0-360, GROUNDWATER = 4 FEET, E_o=0.278 CM/DAY
RK12.DAT	DAY 0-360, GROUNDWATER = 3 FEET, E_o=0.278 CM/DAY
RK13.DAT	DAY 0-360, GROUNDWATER = 2 FEET, E_o=0.278 CM/DAY
RK14.DAT	DAY 0-360, GROUNDWATER = 1 FEET, E_o=0.278 CM/DAY
RK15.DAT	DAY 360-370 RESTART FOR RK11.DAT

```
RK11.DAT ROCKER - GROUNDWATER EVAP (4 ft)
  80    2   39    2    3    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   2    2    2    2    1    1    1    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 2.00E-03  2.00E-02  3.70E-01  0.00E+00  2.00E-02  2.10E+00 5.100E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  9.00E-02  1.66E+00 8.700E-02
1
 1.00E-04  1.00E-03  4.80E-01  0.00E+00  3.00E-02  1.60E+00 2.800E-02
1
   1   -4       0.0     243.84     -20.00
   2   -4      10.0     243.84     -20.00
   3    0       0.0     242.57     -20.00
   4    0      10.0     242.57     -20.00
   5    0       0.0     241.30     -20.00
   6    0      10.0     241.30     -20.00
   7    0       0.0     240.03     -20.00
   8    0      10.0     240.03     -20.00
   9    0       0.0     238.76     -20.00
  10    0      10.0     238.76     -20.00
  11    0       0.0     236.22     -20.00
  12    0      10.0     236.22     -20.00
  13    0       0.0     233.68     -20.00
  14    0      10.0     233.68     -20.00
  15    0       0.0     231.14     -20.00
  16    0      10.0     231.14     -20.00
  17    0       0.0     228.60     -20.00
  18    0      10.0     228.60     -20.00
  19    0       0.0     224.79     -20.00
  20    0      10.0     224.79     -20.00
  21    0       0.0     220.98     -20.00
  22    0      10.0     220.98     -20.00
  23    0       0.0     213.36     -20.00
  24    0      10.0     213.36     -20.00
  25    0       0.0     205.74     -20.00
  26    0      10.0     205.74     -20.00
  27    0       0.0     198.12     -20.00
  28    0      10.0     198.12     -20.00
  29    0       0.0     190.50     -20.00
  30    0      10.0     190.50     -20.00
  31    0       0.0     182.88     -20.00
  32    0      10.0     182.88     -20.00
  33    0       0.0     175.26     -20.00
  34    0      10.0     175.26     -20.00
  35    0       0.0     167.64     -20.00
  36    0      10.0     167.64     -20.00
  37    0       0.0     160.02     -20.00
  38    0      10.0     160.02     -20.00
  39    0       0.0     152.40     -20.00
  40    0      10.0     152.40     -20.00
  41    0       0.0     144.78     -15.00
  42    0      10.0     144.78     -15.00
  43    0       0.0     137.16     -10.00
  44    0      10.0     137.16     -10.00
  45    0       0.0     129.54      -5.00
  46    0      10.0     129.54      -5.00
  47    1       0.0     121.92       0.00
  48    1      10.0     121.92       0.00
  49    1       0.0     114.30       7.62
  50    1      10.0     114.30       7.62
  51    1       0.0     106.68      15.24
```

```
    52    1        10.0     106.68     15.24
    53    1         0.0      99.06     22.86
    54    1        10.0      99.06     22.86
    55    1         0.0      91.44     30.48
    56    1        10.0      91.44     30.48
    57    1         0.0      83.82     38.10
    58    1        10.0      83.82     38.10
    59    1         0.0      76.20     45.72
    60    1        10.0      76.20     45.72
    61    1         0.0      68.58     53.34
    62    1        10.0      68.58     53.34
    63    1         0.0      60.96     60.96
    64    1        10.0      60.96     60.96
    65    1         0.0      53.34     68.58
    66    1        10.0      53.34     68.58
    67    1         0.0      45.72     76.20
    68    1        10.0      45.72     76.20
    69    1         0.0      38.10     83.82
    70    1        10.0      38.10     83.82
    71    1         0.0      30.48     91.44
    72    1        10.0      30.48     91.44
    73    1         0.0      22.86     99.06
    74    1        10.0      22.86     99.06
    75    1         0.0      15.24    106.68
    76    1        10.0      15.24    106.68
    77    1         0.0       7.62    114.30
    78    1        10.0       7.62    114.30
    79    1         0.0       0.00    121.92
    80    1        10.0       0.00    121.92
     1    1    3    4    2    1
     2    3    5    6    4    1
     3    5    7    8    6    1
     4    7    9   10    8    1
     5    9   11   12   10    1
     6   11   13   14   12    1
     7   13   15   16   14    1
     8   15   17   18   16    1
     9   17   19   20   18    1
    10   19   21   22   20    1
    11   21   23   24   22    1
    12   23   25   26   24    1
    13   25   27   28   26    1
    14   27   29   30   28    2
    15   29   31   32   30    2
    16   31   33   34   32    3
    17   33   35   36   34    3
    18   35   37   38   36    3
    19   37   39   40   38    3
    20   39   41   42   40    3
    21   41   43   44   42    3
    22   43   45   46   44    4
    23   45   47   48   46    4
    24   47   49   50   48    4
    25   49   51   52   50    4
    26   51   53   54   52    4
    27   53   55   56   54    4
    28   55   57   58   56    2
    29   57   59   60   58    2
    30   59   61   62   60    2
    31   61   63   64   62    2
    32   63   65   66   64    2
    33   65   67   68   66    2
    34   67   69   70   68    2
    35   69   71   72   70    2
    36   71   73   74   72    2
    37   73   75   76   74    2
    38   75   77   78   76    2
    39   77   79   80   78    2
END
```

```
RK12.DAT ROCKER - GROUNDWATER EVAP (3 ft)
  80     2    39     2     3     0    30     1     0     0
   0     0     0     0     0     2     1     2    20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2    19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39     3    40     4
2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
1.00E+00  1.00E+00  1.00E+00  1.00E+00
   2     2     2     2     1     1     1     1     1     1     1     1     1     1
1
   1     1     1     1
1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01    40
1.00E+00  1.00E+00
2.00E-03  2.00E-02  3.70E-01  0.00E+00  2.00E-02  2.10E+00 5.100E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  9.00E-02  1.66E+00 8.700E-02
1
 1.00E-04  1.00E-03  4.80E-01  0.00E+00  3.00E-02  1.60E+00 2.800E-02
1
    1    -4       0.0     243.84     -20.00
    2    -4      10.0     243.84     -20.00
    3     0       0.0     242.57     -20.00
    4     0      10.0     242.57     -20.00
    5     0       0.0     241.30     -20.00
    6     0      10.0     241.30     -20.00
    7     0       0.0     240.03     -20.00
    8     0      10.0     240.03     -20.00
    9     0       0.0     238.76     -20.00
   10     0      10.0     238.76     -20.00
   11     0       0.0     236.22     -20.00
   12     0      10.0     236.22     -20.00
   13     0       0.0     233.68     -20.00
   14     0      10.0     233.68     -20.00
   15     0       0.0     231.14     -20.00
   16     0      10.0     231.14     -20.00
   17     0       0.0     228.60     -20.00
   18     0      10.0     228.60     -20.00
   19     0       0.0     224.79     -20.00
   20     0      10.0     224.79     -20.00
   21     0       0.0     220.98     -20.00
   22     0      10.0     220.98     -20.00
   23     0       0.0     213.36     -20.00
   24     0      10.0     213.36     -20.00
   25     0       0.0     205.74     -20.00
   26     0      10.0     205.74     -20.00
   27     0       0.0     198.12     -20.00
   28     0      10.0     198.12     -20.00
   29     0       0.0     190.50     -20.00
   30     0      10.0     190.50     -20.00
   31     0       0.0     182.88     -20.00
   32     0      10.0     182.88     -20.00
   33     0       0.0     175.26     -15.00
   34     0      10.0     175.26     -15.00
   35     0       0.0     167.64     -10.00
   36     0      10.0     167.64     -10.00
   37     0       0.0     160.02      -5.00
   38     0      10.0     160.02      -5.00
   39     1       0.0     152.40       0.00
   40     1      10.0     152.40       0.00
   41     1       0.0     144.78       7.62
   42     1      10.0     144.78       7.62
   43     1       0.0     137.16      15.24
   44     1      10.0     137.16      15.24
   45     1       0.0     129.54      22.86
   46     1      10.0     129.54      22.86
   47     1       0.0     121.92      30.48
   48     1      10.0     121.92      30.48
   49     1       0.0     114.30      38.10
   50     1      10.0     114.30      38.10
   51     1       0.0     106.68      45.72
```

```
    52     1          10.0      106.68      45.72
    53     1           0.0       99.06      53.34
    54     1          10.0       99.06      53.34
    55     1           0.0       91.44      60.96
    56     1          10.0       91.44      60.96
    57     1           0.0       83.82      68.58
    58     1          10.0       83.82      68.58
    59     1           0.0       76.20      76.20
    60     1          10.0       76.20      76.20
    61     1           0.0       68.58      83.82
    62     1          10.0       68.58      83.82
    63     1           0.0       60.96      91.44
    64     1          10.0       60.96      91.44
    65     1           0.0       53.34      99.06
    66     1          10.0       53.34      99.06
    67     1           0.0       45.72     106.68
    68     1          10.0       45.72     106.68
    69     1           0.0       38.10     114.30
    70     1          10.0       38.10     114.30
    71     1           0.0       30.48     121.92
    72     1          10.0       30.48     121.92
    73     1           0.0       22.86     129.54
    74     1          10.0       22.86     129.54
    75     1           0.0       15.24     137.16
    76     1          10.0       15.24     137.16
    77     1           0.0        7.62     144.78
    78     1          10.0        7.62     144.78
    79     1           0.0        0.00     152.40
    80     1          10.0        0.00     152.40
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
```

```
RK13.DAT ROCKER - GROUNDWATER EVAP (2 ft)
  80     2    39     2     3     0    30     1     0     0
   0     0     0     0     0     2     1     2    20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2    19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39     3    40     4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   2     2     2     2     1     1     1     1     1     1     1     1     1     1
1
   1     1     1     1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01    40
 1.00E+00  1.00E+00
 2.00E-03  2.00E-02  3.70E-01  0.00E+00  2.00E-02  2.10E+00 5.100E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  9.00E-02  1.66E+00 8.700E-02
1
 1.00E-04  1.00E-03  4.80E-01  0.00E+00  3.00E-02  1.60E+00 2.800E-02
1
   1    -4       0.0     243.84     -20.00
   2    -4      10.0     243.84     -20.00
   3     0       0.0     242.57     -20.00
   4     0      10.0     242.57     -20.00
   5     0       0.0     241.30     -20.00
   6     0      10.0     241.30     -20.00
   7     0       0.0     240.03     -20.00
   8     0      10.0     240.03     -20.00
   9     0       0.0     238.76     -20.00
  10     0      10.0     238.76     -20.00
  11     0       0.0     236.22     -20.00
  12     0      10.0     236.22     -20.00
  13     0       0.0     233.68     -20.00
  14     0      10.0     233.68     -20.00
  15     0       0.0     231.14     -20.00
  16     0      10.0     231.14     -20.00
  17     0       0.0     228.60     -20.00
  18     0      10.0     228.60     -20.00
  19     0       0.0     224.79     -20.00
  20     0      10.0     224.79     -20.00
  21     0       0.0     220.98     -20.00
  22     0      10.0     220.98     -20.00
  23     0       0.0     213.36     -20.00
  24     0      10.0     213.36     -20.00
  25     0       0.0     205.74     -15.00
  26     0      10.0     205.74     -15.00
  27     0       0.0     198.12     -10.00
  28     0      10.0     198.12     -10.00
  29     0       0.0     190.50      -5.00
  30     0      10.0     190.50      -5.00
  31     1       0.0     182.88       0.00
  32     1      10.0     182.88       0.00
  33     1       0.0     175.26       7.62
  34     1      10.0     175.26       7.62
  35     1       0.0     167.64      15.24
  36     1      10.0     167.64      15.24
  37     1       0.0     160.02      22.86
  38     1      10.0     160.02      22.86
  39     1       0.0     152.40      30.48
  40     1      10.0     152.40      30.48
  41     1       0.0     144.78      38.10
  42     1      10.0     144.78      38.10
  43     1       0.0     137.16      45.72
  44     1      10.0     137.16      45.72
  45     1       0.0     129.54      53.34
  46     1      10.0     129.54      53.34
  47     1       0.0     121.92      60.96
  48     1      10.0     121.92      60.96
  49     1       0.0     114.30      68.58
  50     1      10.0     114.30      68.58
  51     1       0.0     106.68      76.20
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    52     1          10.0      106.68       76.20
    53     1           0.0       99.06       83.82
    54     1          10.0       99.06       83.82
    55     1           0.0       91.44       91.44
    56     1          10.0       91.44       91.44
    57     1           0.0       83.82       99.06
    58     1          10.0       83.82       99.06
    59     1           0.0       76.20      106.68
    60     1          10.0       76.20      106.68
    61     1           0.0       68.58      114.30
    62     1          10.0       68.58      114.30
    63     1           0.0       60.96      121.92
    64     1          10.0       60.96      121.92
    65     1           0.0       53.34      129.54
    66     1          10.0       53.34      129.54
    67     1           0.0       45.72      137.16
    68     1          10.0       45.72      137.16
    69     1           0.0       38.10      144.78
    70     1          10.0       38.10      144.78
    71     1           0.0       30.48      152.40
    72     1          10.0       30.48      152.40
    73     1           0.0       22.86      160.02
    74     1          10.0       22.86      160.02
    75     1           0.0       15.24      167.64
    76     1          10.0       15.24      167.64
    77     1           0.0        7.62      175.26
    78     1          10.0        7.62      175.26
    79     1           0.0        0.00      182.88
    80     1          10.0        0.00      182.88
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
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RK14.DAT ROCKER - GROUNDWATER EVAP (1 ft)
  80    2   39    2    3    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   2    2    2    2    1    1    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 2.00E-03  2.00E-02  3.70E-01  0.00E+00  2.00E-02  2.10E+00 5.100E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  9.00E-02  1.66E+00 8.700E-02
1
 1.00E-04  1.00E-03  4.80E-01  0.00E+00  3.00E-02  1.60E+00 2.800E-02
1
   1   -4      0.0    243.84    -20.00
   2   -4     10.0    243.84    -20.00
   3    0      0.0    242.57    -20.00
   4    0     10.0    242.57    -20.00
   5    0      0.0    241.30    -20.00
   6    0     10.0    241.30    -20.00
   7    0      0.0    240.03    -20.00
   8    0     10.0    240.03    -20.00
   9    0      0.0    238.76    -20.00
  10    0     10.0    238.76    -20.00
  11    0      0.0    236.22    -20.00
  12    0     10.0    236.22    -20.00
  13    0      0.0    233.68    -20.00
  14    0     10.0    233.68    -20.00
  15    0      0.0    231.14    -20.00
  16    0     10.0    231.14    -20.00
  17    0      0.0    228.60    -15.00
  18    0     10.0    228.60    -15.00
  19    0      0.0    224.79    -10.00
  20    0     10.0    224.79    -10.00
  21    0      0.0    220.98     -5.00
  22    0     10.0    220.98     -5.00
  23    0      0.0    213.36      0.00
  24    0     10.0    213.36      0.00
  25    0      0.0    205.74      7.62
  26    0     10.0    205.74      7.62
  27    0      0.0    198.12     15.24
  28    0     10.0    198.12     15.24
  29    0      0.0    190.50     22.86
  30    0     10.0    190.50     22.86
  31    1      0.0    182.88     30.48
  32    1     10.0    182.88     30.48
  33    1      0.0    175.26     38.10
  34    1     10.0    175.26     38.10
  35    1      0.0    167.64     45.72
  36    1     10.0    167.64     45.72
  37    1      0.0    160.02     53.34
  38    1     10.0    160.02     53.34
  39    1      0.0    152.40     60.96
  40    1     10.0    152.40     60.96
  41    1      0.0    144.78     68.58
  42    1     10.0    144.78     68.58
  43    1      0.0    137.16     76.20
  44    1     10.0    137.16     76.20
  45    1      0.0    129.54     83.82
  46    1     10.0    129.54     83.82
  47    1      0.0    121.92     91.44
  48    1     10.0    121.92     91.44
  49    1      0.0    114.30     99.06
  50    1     10.0    114.30     99.06
  51    1      0.0    106.68    106.68
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    52     1        10.0     106.68     106.68
    53     1         0.0      99.06     114.30
    54     1        10.0      99.06     114.30
    55     1         0.0      91.44     121.92
    56     1        10.0      91.44     121.92
    57     1         0.0      83.82     129.54
    58     1        10.0      83.82     129.54
    59     1         0.0      76.20     137.16
    60     1        10.0      76.20     137.16
    61     1         0.0      68.58     144.78
    62     1        10.0      68.58     144.78
    63     1         0.0      60.96     152.40
    64     1        10.0      60.96     152.40
    65     1         0.0      53.34     160.02
    66     1        10.0      53.34     160.02
    67     1         0.0      45.72     167.64
    68     1        10.0      45.72     167.64
    69     1         0.0      38.10     175.26
    70     1        10.0      38.10     175.26
    71     1         0.0      30.48     182.88
    72     1        10.0      30.48     182.88
    73     1         0.0      22.86     190.50
    74     1        10.0      22.86     190.50
    75     1         0.0      15.24     198.12
    76     1        10.0      15.24     198.12
    77     1         0.0       7.62     205.74
    78     1        10.0       7.62     205.74
    79     1         0.0       0.00     213.36
    80     1        10.0       0.00     213.36
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
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RESTART RK15.DAT// Rocker GW EVAP DAY 360 to 370 (4 ft)
    2     0
   20  1.00E+01  3.60E+02  1.10E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END
```

TIME STEP NO. = 1478
TOTAL TIME = .31100E+08
TIME INTERVAL = .16286E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.22097E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1284.09200	3	-1041.52200
10.00	242.57	-1115.85600	4	-873.28600
.00	241.30	-685.08720	5	-443.78720
10.00	241.30	-571.18550	6	-329.88550
.00	240.03	-519.30860	7	-279.27860
10.00	240.03	-445.87440	8	-205.84440
.00	238.76	-440.31020	9	-201.55020
10.00	238.76	-391.16070	10	-152.40070
.00	236.22	-367.00510	11	-130.78510
10.00	236.22	-335.54750	12	-99.32749
.00	233.68	-324.90750	13	-91.22755
10.00	233.68	-304.07370	14	-70.39371
.00	231.14	-296.75960	15	-65.61958
10.00	231.14	-282.65560	16	-51.51564
.00	228.60	-276.13520	17	-47.53522
10.00	228.60	-266.54920	18	-37.94916
.00	224.79	-253.77840	19	-28.98843
10.00	224.79	-247.90580	20	-23.11578
.00	220.98	-236.86850	21	-15.88847
10.00	220.98	-233.43340	22	-12.45343
.00	213.36	-213.02020	23	.33977
10.00	213.36	-211.15970	24	2.20027
.00	205.74	-195.20240	25	10.53760
10.00	205.74	-194.21370	26	11.52628
.00	198.12	-180.80490	27	17.31512
10.00	198.12	-180.30460	28	17.81537
.00	190.50	-156.30560	29	34.19435
10.00	190.50	-155.88300	30	34.61699
.00	182.88	-138.56590	31	44.31409
10.00	182.88	-138.45390	32	44.42605
.00	175.26	-130.35760	33	44.90243
10.00	175.26	-130.28850	34	44.97147
.00	167.64	-122.33120	35	45.30885
10.00	167.64	-122.28430	36	45.35568
.00	160.02	-114.44580	37	45.57424
10.00	160.02	-114.40870	38	45.61129
.00	152.40	-106.66840	39	45.73163
10.00	152.40	-106.63310	40	45.76691
.00	144.78	-98.97219	41	45.80781
10.00	144.78	-98.93268	42	45.84732
.00	137.16	-91.33551	43	45.82450
10.00	137.16	-91.28619	44	45.87382
.00	129.54	.00000	45	129.54000
10.00	129.54	.00000	46	129.54000
.00	121.92	.00000	47	121.92000
10.00	121.92	.00000	48	121.92000
.00	114.30	7.62000	49	121.92000
10.00	114.30	7.62000	50	121.92000
.00	106.68	15.24000	51	121.92000
10.00	106.68	15.24000	52	121.92000
.00	99.06	22.86000	53	121.92000
10.00	99.06	22.86000	54	121.92000
.00	91.44	30.48000	55	121.92000
10.00	91.44	30.48000	56	121.92000

.00	83.82	38.10000	57	121.92000
10.00	83.82	38.10000	58	121.92000
.00	76.20	45.72000	59	121.92000
10.00	76.20	45.72000	60	121.92000
.00	68.58	53.34000	61	121.92000
10.00	68.58	53.34000	62	121.92000
.00	60.96	60.96000	63	121.92000
10.00	60.96	60.96000	64	121.92000
.00	53.34	68.58000	65	121.92000
10.00	53.34	68.58000	66	121.92000
.00	45.72	76.20000	67	121.92000
10.00	45.72	76.20000	68	121.92000
.00	38.10	83.82000	69	121.92000
10.00	38.10	83.82000	70	121.92000
.00	30.48	91.44001	71	121.92000
10.00	30.48	91.44001	72	121.92000
.00	22.86	99.06001	73	121.92000
10.00	22.86	99.06001	74	121.92000
.00	15.24	106.68000	75	121.92000
10.00	15.24	106.68000	76	121.92000
.00	7.62	114.30000	77	121.92000
10.00	7.62	114.30000	78	121.92000
.00	.00	121.92000	79	121.92000
10.00	.00	121.92000	80	121.92000

TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.99718E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-191.63400	1	52.20602
10.00	243.84	-215.45100	2	28.38904
.00	242.57	-164.92650	3	77.64346
10.00	242.57	-176.66560	4	65.90437
.00	241.30	-149.10450	5	92.19550
10.00	241.30	-156.65730	6	84.64275
.00	240.03	-138.11360	7	101.91640
10.00	240.03	-143.69060	8	96.33939
.00	238.76	-129.76890	9	108.99110
10.00	238.76	-134.24560	10	104.51440
.00	236.22	-117.93260	11	118.28740
10.00	236.22	-120.61440	12	115.60560
.00	233.68	-109.09700	13	124.58300
10.00	233.68	-110.94290	14	122.73710
.00	231.14	-102.01430	15	129.12570
10.00	231.14	-103.42650	16	127.71350
.00	228.60	-96.06085	17	132.53920
10.00	228.60	-97.23720	18	131.36280
.00	224.79	-88.62144	19	136.16850
10.00	224.79	-89.48965	20	135.30030
.00	220.98	-82.23892	21	138.74110
10.00	220.98	-82.96839	22	138.01160
.00	213.36	-71.64815	23	141.71190
10.00	213.36	-72.04175	24	141.31820
.00	205.74	-62.40310	25	143.33690
10.00	205.74	-62.69698	26	143.04300
.00	198.12	-53.90172	27	144.21830
10.00	198.12	-54.18774	28	143.93220
.00	190.50	-40.86984	29	149.63020
10.00	190.50	-40.90315	30	149.59680
.00	182.88	-31.07266	31	151.80730
10.00	182.88	-31.04544	32	151.83460
.00	175.26	-23.15069	33	152.10930
10.00	175.26	-23.14357	34	152.11640
.00	167.64	-15.36254	35	152.27750
10.00	167.64	-15.36273	36	152.27730
.00	160.02	-7.65479	37	152.36520
10.00	160.02	-7.65695	38	152.36310
.00	152.40	.00000	39	152.40000
10.00	152.40	.00000	40	152.40000
.00	144.78	7.62000	41	152.40000
10.00	144.78	7.62000	42	152.40000
.00	137.16	15.24000	43	152.40000
10.00	137.16	15.24000	44	152.40000
.00	129.54	22.86000	45	152.40000
10.00	129.54	22.86000	46	152.40000
.00	121.92	30.48000	47	152.40000
10.00	121.92	30.48000	48	152.40000
.00	114.30	38.10000	49	152.40000
10.00	114.30	38.10000	50	152.40000
.00	106.68	45.72000	51	152.40000
10.00	106.68	45.72000	52	152.40000
.00	99.06	53.34000	53	152.40000
10.00	99.06	53.34000	54	152.40000
.00	91.44	60.96000	55	152.40000
10.00	91.44	60.96000	56	152.40000

.00	83.82	68.58000	57	152.40000
10.00	83.82	68.58000	58	152.40000
.00	76.20	76.20000	59	152.40000
10.00	76.20	76.20000	60	152.40000
.00	68.58	83.82000	61	152.40000
10.00	68.58	83.82000	62	152.40000
.00	60.96	91.44001	63	152.40000
10.00	60.96	91.44001	64	152.40000
.00	53.34	99.06001	65	152.40000
10.00	53.34	99.06001	66	152.40000
.00	45.72	106.68000	67	152.40000
10.00	45.72	106.68000	68	152.40000
.00	38.10	114.30000	69	152.40000
10.00	38.10	114.30000	70	152.40000
.00	30.48	121.92000	71	152.40000
10.00	30.48	121.92000	72	152.40000
.00	22.86	129.54000	73	152.40000
10.00	22.86	129.54000	74	152.40000
.00	15.24	137.16000	75	152.40000
10.00	15.24	137.16000	76	152.40000
.00	7.62	144.78000	77	152.40000
10.00	7.62	144.78000	78	152.40000
.00	.00	152.40000	79	152.40000
10.00	.00	152.40000	80	152.40000

TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.99372E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-62.83094	1	181.00910
10.00	243.84	-62.93501	2	180.90500
.00	242.57	-61.35731	3	181.21270
10.00	242.57	-61.45392	4	181.11610
.00	241.30	-59.90385	5	181.39610
10.00	241.30	-59.99434	6	181.30570
.00	240.03	-58.46871	7	181.56130
10.00	240.03	-58.55421	8	181.47580
.00	238.76	-57.05018	9	181.70980
10.00	238.76	-57.13169	10	181.62830
.00	236.22	-54.26286	11	181.95710
10.00	236.22	-54.32975	12	181.89030
.00	233.68	-51.52420	13	182.15580
10.00	233.68	-51.58063	14	182.09940
.00	231.14	-48.82559	15	182.31440
10.00	231.14	-48.87469	16	182.26530
.00	228.60	-46.15978	17	182.44020
10.00	228.60	-46.20393	18	182.39610
.00	224.79	-42.21406	19	182.57590
10.00	224.79	-42.24849	20	182.54150
.00	220.98	-38.31127	21	182.66870
10.00	220.98	-38.34010	22	182.63990
.00	213.36	-30.60321	23	182.75680
10.00	213.36	-30.61661	24	182.74340
.00	205.74	-22.94867	25	182.79130
10.00	205.74	-22.95693	26	182.78310
.00	198.12	-15.31631	27	182.80370
10.00	198.12	-15.32364	28	182.79640
.00	190.50	-7.62822	29	182.87180
10.00	190.50	-7.62978	30	182.87020
.00	182.88	.00000	31	182.88000
10.00	182.88	.00000	32	182.88000
.00	175.26	7.62000	33	182.88000
10.00	175.26	7.62000	34	182.88000
.00	167.64	15.24000	35	182.88000
10.00	167.64	15.24000	36	182.88000
.00	160.02	22.86000	37	182.88000
10.00	160.02	22.86000	38	182.88000
.00	152.40	30.48000	39	182.88000
10.00	152.40	30.48000	40	182.88000
.00	144.78	38.10000	41	182.88000
10.00	144.78	38.10000	42	182.88000
.00	137.16	45.72000	43	182.88000
10.00	137.16	45.72000	44	182.88000
.00	129.54	53.34000	45	182.88000
10.00	129.54	53.34000	46	182.88000
.00	121.92	60.96000	47	182.88000
10.00	121.92	60.96000	48	182.88000
.00	114.30	68.58000	49	182.88000
10.00	114.30	68.58000	50	182.88000
.00	106.68	76.20000	51	182.88000
10.00	106.68	76.20000	52	182.88000
.00	99.06	83.82000	53	182.88000
10.00	99.06	83.82000	54	182.88000
.00	91.44	91.44001	55	182.88000
10.00	91.44	91.44001	56	182.88000

.00	83.82	99.06001	57	182.88000
10.00	83.82	99.06001	58	182.88000
.00	76.20	106.68000	59	182.88000
10.00	76.20	106.68000	60	182.88000
.00	68.58	114.30000	61	182.88000
10.00	68.58	114.30000	62	182.88000
.00	60.96	121.92000	63	182.88000
10.00	60.96	121.92000	64	182.88000
.00	53.34	129.54000	65	182.88000
10.00	53.34	129.54000	66	182.88000
.00	45.72	137.16000	67	182.88000
10.00	45.72	137.16000	68	182.88000
.00	38.10	144.78000	69	182.88000
10.00	38.10	144.78000	70	182.88000
.00	30.48	152.40000	71	182.88000
10.00	30.48	152.40000	72	182.88000
.00	22.86	160.02000	73	182.88000
10.00	22.86	160.02000	74	182.88000
.00	15.24	167.64000	75	182.88000
10.00	15.24	167.64000	76	182.88000
.00	7.62	175.26000	77	182.88000
10.00	7.62	175.26000	78	182.88000
.00	.00	182.88000	79	182.88000
10.00	.00	182.88000	80	182.88000

TIME STEP NO. = 3895
TOTAL TIME = .31960E+08
TIME INTERVAL = .27400E+03
CUMULATIVE INFLOW INTO THE SYSTEM = -.22202E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1293.68900	3	-1051.11900
10.00	242.57	-1124.09800	4	-881.52760
.00	241.30	-691.13530	5	-449.83530
10.00	241.30	-576.23100	6	-334.93100
.00	240.03	-524.09100	7	-284.06100
10.00	240.03	-449.98340	8	-209.95340
.00	238.76	-444.43860	9	-205.67870
10.00	238.76	-394.81820	10	-156.05820
.00	236.22	-370.49430	11	-134.27430
10.00	236.22	-338.72430	12	-102.50430
.00	233.68	-328.02450	13	-94.34449
10.00	233.68	-306.97570	14	-73.29568
.00	231.14	-299.62730	15	-68.48726
10.00	231.14	-285.37250	16	-54.23247
.00	228.60	-278.82190	17	-50.22186
10.00	228.60	-269.12970	18	-40.52972
.00	224.79	-256.27010	19	-31.48012
10.00	224.79	-250.33030	20	-25.54031
.00	220.98	-239.21830	21	-18.23826
10.00	220.98	-235.73940	22	-14.75941
.00	213.36	-215.17960	23	-1.81963
10.00	213.36	-213.29410	24	.06595
.00	205.74	-197.23160	25	8.50841
10.00	205.74	-196.22720	26	9.51277
.00	198.12	-182.73850	27	15.38153
10.00	198.12	-182.22810	28	15.89191
.00	190.50	-158.14330	29	32.35671
10.00	190.50	-157.72220	30	32.77777
.00	182.88	-140.31470	31	42.56526
10.00	182.88	-140.20400	32	42.67604
.00	175.26	-132.10260	33	43.15741
10.00	175.26	-132.03470	34	43.22525
.00	167.64	-124.07270	35	43.56729
10.00	167.64	-124.02690	36	43.61306
.00	160.02	-116.18460	37	43.83537
10.00	160.02	-116.14790	38	43.87208
.00	152.40	-108.40520	39	43.99477
10.00	152.40	-108.36970	40	44.03028
.00	144.78	-100.70790	41	44.07214
10.00	144.78	-100.66790	42	44.11205
.00	137.16	-93.07086	43	44.08914
10.00	137.16	-93.02103	44	44.13897
.00	129.54	.00000	45	129.54000
10.00	129.54	.00000	46	129.54000
.00	121.92	.00000	47	121.92000
10.00	121.92	.00000	48	121.92000
.00	114.30	7.62000	49	121.92000
10.00	114.30	7.62000	50	121.92000
.00	106.68	15.24000	51	121.92000
10.00	106.68	15.24000	52	121.92000
.00	99.06	22.86000	53	121.92000
10.00	99.06	22.86000	54	121.92000
.00	91.44	30.48000	55	121.92000
10.00	91.44	30.48000	56	121.92000

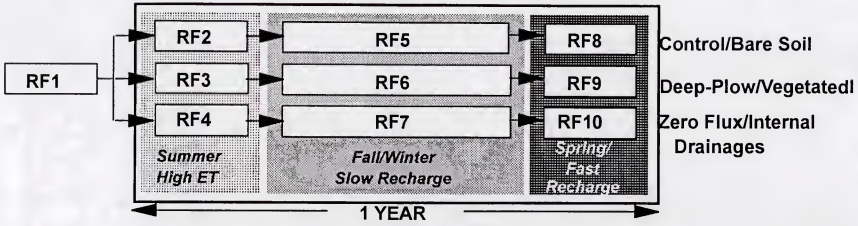
.00	83.82	38.10000	57	121.92000
10.00	83.82	38.10000	58	121.92000
.00	76.20	45.72000	59	121.92000
10.00	76.20	45.72000	60	121.92000
.00	68.58	53.34000	61	121.92000
10.00	68.58	53.34000	62	121.92000
.00	60.96	60.96000	63	121.92000
10.00	60.96	60.96000	64	121.92000
.00	53.34	68.58000	65	121.92000
10.00	53.34	68.58000	66	121.92000
.00	45.72	76.20000	67	121.92000
10.00	45.72	76.20000	68	121.92000
.00	38.10	83.82000	69	121.92000
10.00	38.10	83.82000	70	121.92000
.00	30.48	91.44001	71	121.92000
10.00	30.48	91.44001	72	121.92000
.00	22.86	99.06002	73	121.92000
10.00	22.86	99.06002	74	121.92000
.00	15.24	106.68000	75	121.92000
10.00	15.24	106.68000	76	121.92000
.00	7.62	114.30000	77	121.92000
10.00	7.62	114.30000	78	121.92000
.00	.00	121.92000	79	121.92000
10.00	.00	121.92000	80	121.92000

APPENDIX E2.3

RAMSAY UNSAT2 MODEL RUN

RAMSAY UNSAT2 MODEL RUNS

TREATMENT COMPARISONS



CAPILLARY RISE
EVAPORATION FROM GROUNDWATER

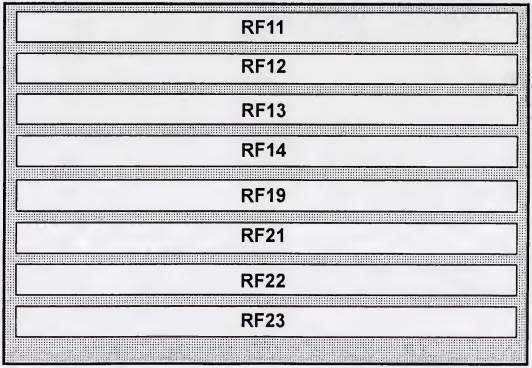


Table . **Domain description for Ramsay UNSAT2 model runs.**

Run Number	Treatment	Surface Flux Boundary Condition	Daily Potential Evap (-) or Infiltration (+)	Subsurface Boundary Conditions	Run Duration	Input Head Conditions
RF1	Preliminary Draindown	Zero Flux	Zero	Constant head=0 below 6.0'	90 days	-20 cm suction
RF2	Control/Net Evaporation	Bare soil	-3.22E-06 cm/s	Zero flux	90 days	RF1 output
RF3	Vegetated/Net Evaporation	Vegetated	-3.22E-06 cm/s	Zero flux	90 days	RF1 output
RF4	Zero Flux	Zero Flux	Zero	Zero flux	90 days	RF1 output
RF5	Control/Slow Recharge	Bare soil	+3.22E-07 cm/s	Zero flux	180 days	RF2 output
RF6	Vegetated/Net Evaporation	Vegetated	+3.22E-07 cm/s	Zero flux	180 days	RF3 output
RF7	Zero Flux	Zero Flux	Zero	Zero flux	180 days	RF4 output
RF8	Control/Fast Recharge	Bare soil	+1.28E-06 cm/s	Zero flux	90 days	RF5 output
RF9	Vegetated/Fast Recharge	Vegetated	+1.28E-06 cm/s	Zero flux	90 days	RF6 output
RF10	Zero Flux	Zero Flux	Zero	Zero flux	90 days	RF7 output
RF11[1]	Control-capillary rise from 8 feet	Bare soil	-3.22E-06 cm/s	Constant head below 8 feet	360 days	-20 cm suction, 0 cm suction at 8 feet
RF12[1]	Control-capillary rise from 8 feet	Bare soil	-3.22E-06 cm/s	Constant head below 6 feet	360 days	-20 cm suction, 0 cm suction at 6 feet

Run Number	Treatment	Surface Flux Boundary Condition	Daily Potential Evap (-) or Infiltration (+)	Subsurface Boundary Conditions	Run Duration	Input Head Conditions
RF13[1]	Control-capillary rise from 4 feet	Bare soil	-3.22E-06 cm/s	Constant head below 4 feet	360 days	-20 cm suction, 0 cm suction at 4 feet
RF14[1]	Control-capillary rise from 2 feet	Bare soil	-3.22E-06 cm/s	Constant head below 2 feet	360 days	-20 cm suction, 0 cm suction at 2 feet
RF19[1]	Control-capillary rise from 3 feet	Bare soil	-3.22E-06 cm/s	Constant head below 3 feet	360 days	-20 cm suction, 0 cm suction at 3 feet
RF21[1]	Control-capillary rise from 2 feet	Bare soil	-6.94E-06 cm/s	Constant head below 2 feet	360 days	-20 cm suction, 0 cm suction at 2 feet
RF22[1]	Control-capillary rise from 3 feet	Bare soil	-6.94E-06 cm/s	Constant head below 3 feet	360 days	-20 cm suction, 0 cm suction at 3 feet
RF23[1]	Control-capillary rise from 4 feet	Bare soil	-6.94E-06 cm/s	Constant head below 4 feet	360 days	-20 cm suction, 0 cm suction at 4 feet

[1] - The actual evaporation rate was determined by re-starting the output file for 10 days to determine the daily evaporation rate to see if it was equal to or less than E_o of -3.22E-06 cm/s or -6.94E-06 cm/s.

The UNSAT2 runs for the Ramsay Flats site consist of the following:

Each run is saved on a separate subdirectory.
The subdirectory contains:

UNSAT.out	Detailed text output for model run
UNS1.DAT	Pass file for next sequential run
UNS10.DAT	Formatted output of domain at end of run
$$$.WQ!	Quattro file for plotting UNS10.dat

The runs are as follows

	Control	Deep Plow	Zero Flux
Day 0-180	RF1	RF1	RF1
Day 180-270 PET -25cm	RF2 Bare Soil	RF3 Veg	RF4 Draindown
Day 270-450 Perc -5cm	RF5 Low Flux	RF6 Low Flux	RF7 Draindown
Day 450-540 Perc -10cm	RF8 High Flux	RF9 High Flux	RF10 Draindown

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RF01.DAT FILE

```
RAMSAY FLATS - EVAPORATION (DAY 1 OF PREPARATORY DRAIN)
 80    2   39    2    4    0   30    1    0    0
  0    0    0    0    0    2    1    2   20
0.00E+00 -1.50E+04  1.00E-01
5.00E+00  5.00E+00
  2   19
-1.50E+04  0.00E+00
5.00E+00  5.00E+00
 39    3   40    4
2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
1.00E+00  1.00E+00  1.00E+00  1.00E+00
  3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
  1    1    1    1
1.00E+01  2.16E+04  1.20E+00 1.555E+07  1.00E+01   40
1.00E+00  1.00E+00
5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
   1   -4      0.0    243.84    -20.00
   2   -4     10.0    243.84    -20.00
   3    0      0.0    242.57    -20.00
   4    0     10.0    242.57    -20.00
   5    0      0.0    241.30    -20.00
   6    0     10.0    241.30    -20.00
   7    0      0.0    240.03    -20.00
   8    0     10.0    240.03    -20.00
   9    0      0.0    238.76    -20.00
  10    0     10.0    238.76    -20.00
```

11	0	0.0	236.22	-20.00
12	0	10.0	236.22	-20.00
13	0	0.0	233.68	-20.00
14	0	10.0	233.68	-20.00
15	0	0.0	231.14	-20.00
16	0	10.0	231.14	-20.00
17	0	0.0	228.60	-20.00
18	0	10.0	228.60	-20.00
19	0	0.0	224.79	-20.00
20	0	10.0	224.79	-20.00
21	0	0.0	220.98	-20.00
22	0	10.0	220.98	-20.00
23	0	0.0	213.36	-20.00
24	0	10.0	213.36	-20.00
25	0	0.0	205.74	-20.00
26	0	10.0	205.74	-20.00
27	0	0.0	198.12	-20.00
28	0	10.0	198.12	-20.00
29	0	0.0	190.50	-20.00
30	0	10.0	190.50	-20.00
31	0	0.0	182.88	-20.00
32	0	10.0	182.88	-20.00
33	0	0.0	175.26	-20.00
34	0	10.0	175.26	-20.00
35	0	0.0	167.64	-20.00
36	0	10.0	167.64	-20.00
37	0	0.0	160.02	-20.00
38	0	10.0	160.02	-20.00
39	0	0.0	152.40	-20.00
40	0	10.0	152.40	-20.00
41	0	0.0	144.78	-20.00
42	0	10.0	144.78	-20.00
43	0	0.0	137.16	-20.00
44	0	10.0	137.16	-20.00
45	0	0.0	129.54	-20.00
46	0	10.0	129.54	-20.00
47	0	0.0	121.92	-20.00
48	0	10.0	121.92	-20.00
49	0	0.0	114.30	-20.00
50	0	10.0	114.30	-20.00
51	0	0.0	106.68	-20.00
52	0	10.0	106.68	-20.00
53	0	0.0	99.06	-20.00
54	0	10.0	99.06	-20.00
55	0	0.0	91.44	-20.00
56	0	10.0	91.44	-20.00
57	0	0.0	83.82	-20.00
58	0	10.0	83.82	-20.00
59	0	0.0	76.20	-20.00
60	0	10.0	76.20	-20.00
61	0	0.0	68.58	-15.00
62	0	10.0	68.58	-15.00
63	0	0.0	60.96	-10.00
64	0	10.0	60.96	-10.00
65	0	0.0	53.34	-5.00
66	0	10.0	53.34	-5.00
67	1	0.0	45.72	0.00
68	1	10.0	45.72	0.00
69	1	0.0	38.10	0.00
70	1	10.0	38.10	0.00
71	1	0.0	30.48	0.00
72	1	10.0	30.48	0.00
73	1	0.0	22.86	0.00
74	1	10.0	22.86	0.00

```
   75     1          0.0        15.24        0.00
   76     1         10.0        15.24        0.00
   77     1          0.0         7.62        0.00
   78     1         10.0         7.62        0.00
   79     1          0.0         0.00        0.00
   80     1         10.0         0.00        0.00
    1     1     3     4     2     1
    2     3     5     6     4     1
    3     5     7     8     6     1
    4     7     9    10     8     1
    5     9    11    12    10     1
    6    11    13    14    12     1
    7    13    15    16    14     1
    8    15    17    18    16     1
    9    17    19    20    18     1
   10    19    21    22    20     1
   11    21    23    24    22     1
   12    23    25    26    24     1
   13    25    27    28    26     1
   14    27    29    30    28     2
   15    29    31    32    30     2
   16    31    33    34    32     3
   17    33    35    36    34     3
   18    35    37    38    36     3
   19    37    39    40    38     3
   20    39    41    42    40     3
   21    41    43    44    42     3
   22    43    45    46    44     4
   23    45    47    48    46     4
   24    47    49    50    48     4
   25    49    51    52    50     4
   26    51    53    54    52     4
   27    53    55    56    54     4
   28    55    57    58    56     2
   29    57    59    60    58     2
   30    59    61    62    60     2
   31    61    63    64    62     2
   32    63    65    66    64     2
   33    65    67    68    66     2
   34    67    69    70    68     2
   35    69    71    72    70     2
   36    71    73    74    72     2
   37    73    75    76    74     2
   38    75    77    78    76     2
   39    77    79    80    78     2
END
```

```
RESTART RF2.DAT// RAMSAY DAY 180 to 270: BARE SOIL EVAPORATION
     2     0
    20  2.16E+04  2.16E+04  2.00E+00 2.333E+07  1.00E+00  0.00E+00  0.00E+00   40
 -3.22E-06 -1.50E+04  1.00E-01
     0  0.00E+00
    61     0  0.00E+00
    62     0  0.00E+00
    63     0  0.00E+00
    64     0  0.00E+00
    65     0  0.00E+00
    66     0  0.00E+00
    67     0  0.00E+00
    68     0  0.00E+00
    69     0  0.00E+00
    70     0  0.00E+00
    71     0  0.00E+00
    72     0  0.00E+00
    73     0  0.00E+00
    74     0  0.00E+00
    75     0  0.00E+00
    76     0  0.00E+00
    77     0  0.00E+00
    78     0  0.00E+00
    79     0  0.00E+00
    80     0  0.00E+00

END
```

```
RESTART RF3.DAT// RAMSAY DAY 180 to 270: EVAPOTRANSPIRATION
     2     0
    20  2.16E+04  2.16E+04  2.00E+00 2.333E+07  1.00E+00  0.00E+00  0.00E+00   40
 -3.22E-07 -1.50E+04  1.00E-01
     1 -2.90E-06
  2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
  1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E-00  1.00E-00  1.00E-00
  1.00E-00  1.00E-00  1.00E-00  1.00E-00  1.00E-00
    61     0  0.00E+00
    62     0  0.00E+00
    63     0  0.00E+00
    64     0  0.00E+00
    65     0  0.00E+00
    66     0  0.00E+00
    67     0  0.00E+00
    68     0  0.00E+00
    69     0  0.00E+00
    70     0  0.00E+00
    71     0  0.00E+00
    72     0  0.00E+00
    73     0  0.00E+00
    74     0  0.00E+00
    75     0  0.00E+00
    76     0  0.00E+00
    77     0  0.00E+00
    78     0  0.00E+00
    79     0  0.00E+00
    80     0  0.00E+00

END
```

```
RESTART RF4.DAT// RAMSAY DAY 180 to 270: DRAINDOWN
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 2.333E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RF5.DAT// RAMSAY DAY 270 to 450: BARE SOIL EVAPORATION
    2     0
   20  1.00E+01  2.16E+04  1.30E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
 3.215E-07 -1.50E+04  1.00E-01
    0  0.00E+00
   61     0  0.00E+00
   62     0  0.00E+00
   63     0  0.00E+00
   64     0  0.00E+00
   65     0  0.00E+00
   66     0  0.00E+00
   67     0  0.00E+00
   68     0  0.00E+00
   69     0  0.00E+00
   70     0  0.00E+00
   71     0  0.00E+00
   72     0  0.00E+00
   73     0  0.00E+00
   74     0  0.00E+00
   75     0  0.00E+00
   76     0  0.00E+00
   77     0  0.00E+00
   78     0  0.00E+00
   79     0  0.00E+00
   80     0  0.00E+00

END
```

```
RESTART RF6.DAT// RAMSAY DAY 270 to 450: EVAPOTRANSPIRATION
    2     0
   20  1.00E+01  2.16E+04  1.20E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
 3.215E-07 -1.50E+04  1.00E-01
    0  0.00E+00
   61     0  0.00E+00
   62     0  0.00E+00
   63     0  0.00E+00
   64     0  0.00E+00
   65     0  0.00E+00
   66     0  0.00E+00
   67     0  0.00E+00
   68     0  0.00E+00
   69     0  0.00E+00
   70     0  0.00E+00
   71     0  0.00E+00
   72     0  0.00E+00
   73     0  0.00E+00
   74     0  0.00E+00
   75     0  0.00E+00
   76     0  0.00E+00
   77     0  0.00E+00
   78     0  0.00E+00
   79     0  0.00E+00
   80     0  0.00E+00

END
```

```
RESTART RF7.DAT// RAMSAY DAY 270 to 450: DRAINDOWN
    2    0
   20  1.00E+01  2.16E+04  2.00E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RF8.DAT// RAMSAY DAY 450 to 540: BARE SOIL EVAPORATION
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 4.666E+07  1.00E+00  0.00E+00  0.00E+00   40
 1.286E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RF9.DAT// RAMSAY DAY 450 to 540: EVAPOTRANSPIRATION
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 4.666E+07  1.00E+00  0.00E+00  0.00E+00   40
 1.286E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART RF10.DAT// RAMSAY DAY 450 to 540: DRAINDOWN
    2     0
   20  2.16E+04  2.16E+04  2.00E+00 4.666E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
    0  0.00E+00
   61     0  0.00E+00
   62     0  0.00E+00
   63     0  0.00E+00
   64     0  0.00E+00
   65     0  0.00E+00
   66     0  0.00E+00
   67     0  0.00E+00
   68     0  0.00E+00
   69     0  0.00E+00
   70     0  0.00E+00
   71     0  0.00E+00
   72     0  0.00E+00
   73     0  0.00E+00
   74     0  0.00E+00
   75     0  0.00E+00
   76     0  0.00E+00
   77     0  0.00E+00
   78     0  0.00E+00
   79     0  0.00E+00
   80     0  0.00E+00

END
```

RF01.DAT OUTPUT FILE

TIME STEP NO. = 759
TOTAL TIME = .15550E+08
TIME INTERVAL = .10135E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.14414E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-174.74000	1	69.10001
10.00	243.84	-174.75060	2	69.08940
.00	242.57	-173.47100	3	69.09900
10.00	242.57	-173.48110	4	69.08888
.00	241.30	-172.20340	5	69.09656
10.00	241.30	-172.21320	6	69.08679
.00	240.03	-170.93730	7	69.09265
10.00	240.03	-170.94680	8	69.08318
.00	238.76	-169.67260	9	69.08736
10.00	238.76	-169.68190	10	69.07813
.00	236.22	-167.14760	11	69.07240
10.00	236.22	-167.15570	12	69.06433
.00	233.68	-164.62740	13	69.05258
10.00	233.68	-164.63470	14	69.04533
.00	231.14	-162.11180	15	69.02820
10.00	231.14	-162.11850	16	69.02150
.00	228.60	-159.60040	17	68.99959
10.00	228.60	-159.60680	18	68.99321
.00	224.79	-155.84090	19	68.94906
10.00	224.79	-155.84630	20	68.94365
.00	220.98	-152.08900	21	68.89094
10.00	220.98	-152.09400	22	68.88598
.00	213.36	-144.60590	23	68.75411
10.00	213.36	-144.60750	24	68.75252
.00	205.74	-137.14100	25	68.59895
10.00	205.74	-137.14140	26	68.59863
.00	198.12	-129.68780	27	68.43216
10.00	198.12	-129.68850	28	68.43152
.00	190.50	-122.09810	29	68.40195
10.00	190.50	-122.09740	30	68.40255
.00	182.88	-114.51200	31	68.36797
10.00	182.88	-114.51080	32	68.36924
.00	175.26	-106.94920	33	68.31080
10.00	175.26	-106.94770	34	68.31230
.00	167.64	-99.38634	35	68.25366
10.00	167.64	-99.38475	36	68.25526
.00	160.02	-91.82211	37	68.19790
10.00	160.02	-91.82052	38	68.19949
.00	152.40	-84.25538	39	68.14462
10.00	152.40	-84.25388	40	68.14612
.00	144.78	-76.68522	41	68.09478
10.00	144.78	-76.68391	42	68.09609
.00	137.16	-69.11090	43	68.04910
10.00	137.16	-69.10990	44	68.05010
.00	129.54	-66.26328	45	63.27671
10.00	129.54	-66.21386	46	63.32613
.00	121.92	-63.11680	47	58.80320
10.00	121.92	-63.03813	48	58.88187
.00	114.30	-59.57301	49	54.72700
10.00	114.30	-59.48295	50	54.81705
.00	106.68	-55.53697	51	51.14303
10.00	106.68	-55.45468	52	51.22532
.00	99.06	-50.93076	53	48.12923
10.00	99.06	-50.87764	54	48.18236
.00	91.44	-45.70865	55	45.73136
10.00	91.44	-45.70789	56	45.73211

.00	83.82	-38.09346	57	45.72654
10.00	83.82	-38.09305	58	45.72695
.00	76.20	-30.47647	59	45.72353
10.00	76.20	-30.47625	60	45.72375
.00	68.58	-22.85825	61	45.72175
10.00	68.58	-22.85814	62	45.72186
.00	60.96	-15.23925	63	45.72074
10.00	60.96	-15.23920	64	45.72080
.00	53.34	-7.61978	65	45.72022
10.00	53.34	-7.61975	66	45.72024
.00	45.72	.00000	67	45.72000
10.00	45.72	.00000	68	45.72000
.00	38.10	.00000	69	38.10000
10.00	38.10	.00000	70	38.10000
.00	30.48	.00000	71	30.48000
10.00	30.48	.00000	72	30.48000
.00	22.86	.00000	73	22.86000
10.00	22.86	.00000	74	22.86000
.00	15.24	.00000	75	15.24000
10.00	15.24	.00000	76	15.24000
.00	7.62	.00000	77	7.62000
10.00	7.62	.00000	78	7.62000
.00	.00	.00000	79	.00000
10.00	.00	.00000	80	.00000

.00	83.82	-38.25262	57	45.56738
10.00	83.82	-38.25253	58	45.56746
.00	76.20	-30.63093	59	45.56907
10.00	76.20	-30.63086	60	45.56914
.00	68.58	-23.01015	61	45.56985
10.00	68.58	-23.01009	62	45.56991
.00	60.96	-15.38984	63	45.57016
10.00	60.96	-15.38979	64	45.57021
.00	53.34	-7.76974	65	45.57026
10.00	53.34	-7.76971	66	45.57029
.00	45.72	-.14972	67	45.57029
10.00	45.72	-.14969	68	45.57031
.00	38.10	7.47030	69	45.57030
10.00	38.10	7.47031	70	45.57031
.00	30.48	15.09031	71	45.57031
10.00	30.48	15.09032	72	45.57032
.00	22.86	22.71032	73	45.57032
10.00	22.86	22.71033	74	45.57033
.00	15.24	30.33033	75	45.57033
10.00	15.24	30.33033	76	45.57034
.00	7.62	37.95033	77	45.57033
10.00	7.62	37.95033	78	45.57033
.00	.00	45.57033	79	45.57033
10.00	.00	45.57033	80	45.57033

TIME STEP NO. = 1119
TOTAL TIME = .23330E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.34148E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-12170.28000	3	-11927.71000
10.00	242.57	-11968.60000	4	-11726.03000
.00	241.30	-10857.57000	5	-10616.27000
10.00	241.30	-10805.72000	6	-10564.42000
.00	240.03	-10159.58000	7	-9919.55200
10.00	240.03	-10268.00000	8	-10027.97000
.00	238.76	-9727.65800	9	-9488.89800
10.00	238.76	-10011.90000	10	-9773.13900
.00	236.22	-9300.82700	11	-9064.60700
10.00	236.22	-9486.44900	12	-9250.22900
.00	233.68	-8291.54900	13	-8057.86900
10.00	233.68	-8526.28000	14	-8292.60000
.00	231.14	-6859.23700	15	-6628.09700
10.00	231.14	-7037.75700	16	-6806.61700
.00	228.60	-5953.97700	17	-5725.37700
10.00	228.60	-6193.07100	18	-5964.47100
.00	224.79	-5126.36100	19	-4901.57100
10.00	224.79	-5277.03900	20	-5052.24900
.00	220.98	-4709.94500	21	-4488.96500
10.00	220.98	-4990.95300	22	-4769.97300
.00	213.36	-4463.05100	23	-4249.69100
10.00	213.36	-4543.99500	24	-4330.63500
.00	205.74	-3935.03800	25	-3729.29800
10.00	205.74	-3976.06600	26	-3770.32600
.00	198.12	-3804.07800	27	-3605.95800
10.00	198.12	-3843.73700	28	-3645.61700
.00	190.50	-3926.34200	29	-3735.84200
10.00	190.50	-3939.48200	30	-3748.98200
.00	182.88	-4837.12000	31	-4654.24000
10.00	182.88	-5017.78600	32	-4834.90600
.00	175.26	-4580.04000	33	-4404.78100
10.00	175.26	-4706.44800	34	-4531.18800
.00	167.64	-3999.81600	35	-3832.17600
10.00	167.64	-4179.72200	36	-4012.08200
.00	160.02	-3149.09100	37	-2989.07100
10.00	160.02	-3377.37000	38	-3217.35000
.00	152.40	-2158.47200	39	-2006.07200
10.00	152.40	-2265.85300	40	-2113.45300
.00	144.78	-1543.68600	41	-1398.90600
10.00	144.78	-1602.14000	42	-1457.36000
.00	137.16	-1246.70900	43	-1109.54900
10.00	137.16	-1333.64100	44	-1196.48100
.00	129.54	-301.67900	45	-172.13900
10.00	129.54	-280.06170	46	-150.52170
.00	121.92	-157.08510	47	-35.16515
10.00	121.92	-144.35470	48	-22.43471
.00	114.30	-105.96520	49	8.33482
10.00	114.30	-100.32110	50	13.97892
.00	106.68	-79.36273	51	27.31727
10.00	106.68	-77.04240	52	29.63760
.00	99.06	-62.10765	53	36.95236
10.00	99.06	-61.33695	54	37.72307
.00	91.44	-49.23639	55	42.20362
10.00	91.44	-49.23388	56	42.20613

.00	83.82	-41.60731	57	42.21269
10.00	83.82	-41.60609	58	42.21391
.00	76.20	-33.98246	59	42.21754
10.00	76.20	-33.98185	60	42.21815
.00	68.58	-26.36010	61	42.21990
10.00	68.58	-26.35978	62	42.22022
.00	60.96	-18.73910	63	42.22089
10.00	60.96	-18.73892	64	42.22108
.00	53.34	-11.11875	65	42.22125
10.00	53.34	-11.11864	66	42.22136
.00	45.72	-3.49866	67	42.22134
10.00	45.72	-3.49859	68	42.22141
.00	38.10	4.12137	69	42.22136
10.00	38.10	4.12142	70	42.22142
.00	30.48	11.74139	71	42.22138
10.00	30.48	11.74142	72	42.22142
.00	22.86	19.36140	73	42.22140
10.00	22.86	19.36142	74	42.22142
.00	15.24	26.98141	75	42.22140
10.00	15.24	26.98142	76	42.22142
.00	7.62	34.60141	77	42.22141
10.00	7.62	34.60142	78	42.22142
.00	.00	42.22141	79	42.22141
10.00	.00	42.22142	80	42.22142

TIME STEP NO. = 1119
TOTAL TIME = .23330E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.14414E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-182.39410	1	61.44586
10.00	243.84	-182.40020	2	61.43982
.00	242.57	-181.12470	3	61.44528
10.00	242.57	-181.13050	4	61.43950
.00	241.30	-179.85610	5	61.44388
10.00	241.30	-179.86170	6	61.43829
.00	240.03	-178.58830	7	61.44166
10.00	240.03	-178.59380	8	61.43623
.00	238.76	-177.32130	9	61.43866
10.00	238.76	-177.32660	10	61.43335
.00	236.22	-174.78980	11	61.43016
10.00	236.22	-174.79460	12	61.42545
.00	233.68	-172.26110	13	61.41887
10.00	233.68	-172.26540	14	61.41458
.00	231.14	-169.73500	15	61.40497
10.00	231.14	-169.73900	16	61.40101
.00	228.60	-167.21130	17	61.38869
10.00	228.60	-167.21510	18	61.38492
.00	224.79	-163.43010	19	61.35991
10.00	224.79	-163.43330	20	61.35671
.00	220.98	-159.65320	21	61.32677
10.00	220.98	-159.65620	22	61.32382
.00	213.36	-152.11140	23	61.24858
10.00	213.36	-152.11240	24	61.24761
.00	205.74	-144.58030	25	61.15972
10.00	205.74	-144.58050	26	61.15950
.00	198.12	-137.05610	27	61.06390
10.00	198.12	-137.05650	28	61.06354
.00	190.50	-129.45400	29	61.04599
10.00	190.50	-129.45360	30	61.04636
.00	182.88	-121.85420	31	61.02580
10.00	182.88	-121.85340	32	61.02656
.00	175.26	-114.26640	33	60.99358
10.00	175.26	-114.26540	34	60.99457
.00	167.64	-106.67890	35	60.96108
10.00	167.64	-106.67770	36	60.96227
.00	160.02	-99.09094	37	60.92907
10.00	160.02	-99.08957	38	60.93043
.00	152.40	-91.50181	39	60.89818
10.00	152.40	-91.50026	40	60.89974
.00	144.78	-83.91108	41	60.86893
10.00	144.78	-83.90927	42	60.87073
.00	137.16	-76.31828	43	60.84172
10.00	137.16	-76.31613	44	60.84387
.00	129.54	-71.58270	45	57.95729
10.00	129.54	-71.54638	46	57.99361
.00	121.92	-66.47415	47	55.44585
10.00	121.92	-66.42339	48	55.49661
.00	114.30	-60.94625	49	53.35375
10.00	114.30	-60.89544	50	53.40456
.00	106.68	-54.98178	51	51.69822
10.00	106.68	-54.94142	52	51.73859
.00	99.06	-48.59546	53	50.46455
10.00	99.06	-48.57281	54	50.48720
.00	91.44	-41.83146	55	49.60855
10.00	91.44	-41.83126	56	49.60875

.00	83.82	-34.21286	57	49.60714
10.00	83.82	-34.21279	58	49.60721
.00	76.20	-26.59352	59	49.60648
10.00	76.20	-26.59352	60	49.60648
.00	68.58	-18.97379	61	49.60621
10.00	68.58	-18.97381	62	49.60619
.00	60.96	-11.35387	63	49.60613
10.00	60.96	-11.35389	64	49.60611
.00	53.34	-3.73388	65	49.60612
10.00	53.34	-3.73389	66	49.60610
.00	45.72	3.88612	67	49.60612
10.00	45.72	3.88611	68	49.60611
.00	38.10	11.50612	69	49.60612
10.00	38.10	11.50612	70	49.60612
.00	30.48	19.12613	71	49.60612
10.00	30.48	19.12613	72	49.60613
.00	22.86	26.74613	73	49.60613
10.00	22.86	26.74613	74	49.60614
.00	15.24	34.36614	75	49.60613
10.00	15.24	34.36614	76	49.60614
.00	7.62	41.98614	77	49.60614
10.00	7.62	41.98614	78	49.60614
.00	.00	49.60614	79	49.60614
10.00	.00	49.60614	80	49.60614

TIME STEP NO. = 1866
TOTAL TIME = .38880E+08
TIME INTERVAL = .18700E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.15387E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-156.21940	1	87.62064
10.00	243.84	-156.10130	2	87.73865
.00	242.57	-155.75180	3	86.81817
10.00	242.57	-155.63590	4	86.93413
.00	241.30	-155.27560	5	86.02438
10.00	241.30	-155.16100	6	86.13898
.00	240.03	-154.79060	7	85.23943
10.00	240.03	-154.67660	8	85.35335
.00	238.76	-154.29660	9	84.46338
10.00	238.76	-154.18270	10	84.57734
.00	236.22	-153.27840	11	82.94161
10.00	236.22	-153.16860	12	83.05140
.00	233.68	-152.22330	13	81.45666
10.00	233.68	-152.11530	14	81.56474
.00	231.14	-151.13080	15	80.00922
10.00	231.14	-151.02200	16	80.11801
.00	228.60	-150.00020	17	78.59985
10.00	228.60	-149.88820	18	78.71181
.00	224.79	-148.22630	19	76.56371
10.00	224.79	-148.11510	20	76.67491
.00	220.98	-146.36380	21	74.61616
10.00	220.98	-146.24820	22	74.73178
.00	213.36	-142.33340	23	71.02658
10.00	213.36	-142.25560	24	71.10442
.00	205.74	-137.93260	25	67.80736
10.00	205.74	-137.88190	26	67.85809
.00	198.12	-133.15900	27	64.96097
10.00	198.12	-133.13060	28	64.98941
.00	190.50	-125.90060	29	64.59939
10.00	190.50	-125.88800	30	64.61203
.00	182.88	-118.55250	31	64.32748
10.00	182.88	-118.55050	32	64.32955
.00	175.26	-111.26420	33	63.99583
10.00	175.26	-111.26420	34	63.99584
.00	167.64	-103.90480	35	63.73524
10.00	167.64	-103.90660	36	63.73343
.00	160.02	-96.48435	37	63.53566
10.00	160.02	-96.48804	38	63.53197
.00	152.40	-89.01233	39	63.38767
10.00	152.40	-89.01826	40	63.38174
.00	144.78	-81.49750	41	63.28250
10.00	144.78	-81.50633	42	63.27367
.00	137.16	-73.94778	43	63.21223
10.00	137.16	-73.96055	44	63.19945
.00	129.54	-72.42116	45	57.11884
10.00	129.54	-72.36120	46	57.17879
.00	121.92	-69.68680	47	52.23319
10.00	121.92	-69.60581	48	52.31419
.00	114.30	-65.82501	49	48.47499
10.00	114.30	-65.75090	50	48.54910
.00	106.68	-61.00064	51	45.67936
10.00	106.68	-60.94565	52	45.73435
.00	99.06	-55.40839	53	43.65163
10.00	99.06	-55.37805	54	43.68197
.00	91.44	-49.22967	55	42.21034
10.00	91.44	-49.22929	56	42.21072

.00	83.82	-41.61231	57	42.20768
10.00	83.82	-41.61216	58	42.20784
.00	76.20	-33.99372	59	42.20628
10.00	76.20	-33.99367	60	42.20633
.00	68.58	-26.37437	61	42.20563
10.00	68.58	-26.37438	62	42.20562
.00	60.96	-18.75462	63	42.20538
10.00	60.96	-18.75464	64	42.20536
.00	53.34	-11.13469	65	42.20531
10.00	53.34	-11.13471	66	42.20529
.00	45.72	-3.51470	67	42.20530
10.00	45.72	-3.51471	68	42.20529
.00	38.10	4.10531	69	42.20531
10.00	38.10	4.10531	70	42.20530
.00	30.48	11.72532	71	42.20532
10.00	30.48	11.72532	72	42.20531
.00	22.86	19.34533	73	42.20533
10.00	22.86	19.34533	74	42.20532
.00	15.24	26.96534	75	42.20534
10.00	15.24	26.96533	76	42.20533
.00	7.62	34.58534	77	42.20534
10.00	7.62	34.58534	78	42.20534
.00	.00	42.20534	79	42.20534
10.00	.00	42.20534	80	42.20534

TIME STEP NO. = 1880
TOTAL TIME = .38880E+08
TIME INTERVAL = .24120E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.29147E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-262.08550	1	-18.24548
10.00	243.84	-264.84120	2	-21.00122
.00	242.57	-264.52510	3	-21.95514
10.00	242.57	-267.29590	4	-24.72586
.00	241.30	-267.05450	5	-25.75453
10.00	241.30	-269.85700	6	-28.55702
.00	240.03	-269.67890	7	-29.64896
10.00	240.03	-272.53080	8	-32.50085
.00	238.76	-272.40420	9	-33.64421
10.00	238.76	-275.32420	10	-36.56419
.00	236.22	-278.22200	11	-42.00204
10.00	236.22	-281.25420	12	-45.03424
.00	233.68	-284.53120	13	-50.85116
10.00	233.68	-287.75090	14	-54.07089
.00	231.14	-291.39910	15	-60.25914
10.00	231.14	-294.89260	16	-63.75261
.00	228.60	-298.90650	17	-70.30646
10.00	228.60	-302.77480	18	-74.17478
.00	224.79	-311.68530	19	-86.89535
10.00	224.79	-316.11600	20	-91.32607
.00	220.98	-326.58630	21	-105.60630
10.00	220.98	-331.85270	22	-110.87280
.00	213.36	-366.37960	23	-153.01960
10.00	213.36	-371.75130	24	-158.39130
.00	205.74	-427.75950	25	-222.01950
10.00	205.74	-432.01060	26	-226.27060
.00	198.12	-537.97360	27	-339.85360
10.00	198.12	-533.36490	28	-335.24490
.00	190.50	-594.43080	29	-403.93080
10.00	190.50	-589.99720	30	-399.49720
.00	182.88	-674.83420	31	-491.95420
10.00	182.88	-667.50800	32	-484.62800
.00	175.26	-698.35830	33	-523.09830
10.00	175.26	-693.99680	34	-518.73680
.00	167.64	-716.37770	35	-548.73770
10.00	167.64	-714.98550	36	-547.34550
.00	160.02	-726.20200	37	-566.18200
10.00	160.02	-728.20560	38	-568.18560
.00	152.40	-725.77840	39	-573.37840
10.00	152.40	-731.94910	40	-579.54920
.00	144.78	-714.28130	41	-569.50130
10.00	144.78	-725.70450	42	-580.92460
.00	137.16	-692.29580	43	-555.13570
10.00	137.16	-710.45250	44	-573.29250
.00	129.54	-280.27200	45	-150.73200
10.00	129.54	-263.13610	46	-133.59610
.00	121.92	-169.93440	47	-48.01442
10.00	121.92	-159.87820	48	-37.95816
.00	114.30	-121.55610	49	-7.25613
10.00	114.30	-116.77000	50	-2.47004
.00	106.68	-93.91672	51	12.76329
10.00	106.68	-91.82697	52	14.85303
.00	99.06	-75.30734	53	23.75268
10.00	99.06	-74.57819	54	24.48183
.00	91.44	-61.29998	55	30.14003
10.00	91.44	-61.29704	56	30.14297

.00	83.82	-53.66717	57	30.15283
10.00	83.82	-53.66573	58	30.15427
.00	76.20	-46.03952	59	30.16047
10.00	76.20	-46.03880	60	30.16119
.00	68.58	-38.41525	61	30.16475
10.00	68.58	-38.41487	62	30.16513
.00	60.96	-30.79305	63	30.16695
10.00	60.96	-30.79284	64	30.16716
.00	53.34	-23.17205	65	30.16795
10.00	53.34	-23.17192	66	30.16808
.00	45.72	-15.55167	67	30.16833
10.00	45.72	-15.55159	68	30.16841
.00	38.10	-7.93155	69	30.16844
10.00	38.10	-7.93150	70	30.16849
.00	30.48	-.31153	71	30.16847
10.00	30.48	-.31150	72	30.16850
.00	22.86	7.30848	73	30.16848
10.00	22.86	7.30850	74	30.16850
.00	15.24	14.92848	75	30.16848
10.00	15.24	14.92850	76	30.16850
.00	7.62	22.54849	77	30.16849
10.00	7.62	22.54850	78	30.16850
.00	.00	30.16849	79	30.16849
10.00	.00	30.16850	80	30.16850

TIME STEP NO. = 1849
TOTAL TIME = .38880E+08
TIME INTERVAL = .21848E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.14414E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-188.26390	1	55.57610
10.00	243.84	-188.26540	2	55.57463
.00	242.57	-186.99410	3	55.57594
10.00	242.57	-186.99540	4	55.57458
.00	241.30	-185.72440	5	55.57561
10.00	241.30	-185.72570	6	55.57431
.00	240.03	-184.45500	7	55.57504
10.00	240.03	-184.45620	8	55.57379
.00	238.76	-183.18570	9	55.57428
10.00	238.76	-183.18690	10	55.57304
.00	236.22	-180.64790	11	55.57208
10.00	236.22	-180.64900	12	55.57096
.00	233.68	-178.11090	13	55.56912
10.00	233.68	-178.11190	14	55.56810
.00	231.14	-175.57450	15	55.56550
10.00	231.14	-175.57550	16	55.56453
.00	228.60	-173.03870	17	55.56128
10.00	228.60	-173.03960	18	55.56036
.00	224.79	-169.23620	19	55.55380
10.00	224.79	-169.23700	20	55.55301
.00	220.98	-165.43480	21	55.54518
10.00	220.98	-165.43560	22	55.54443
.00	213.36	-157.83510	23	55.52492
10.00	213.36	-157.83540	24	55.52463
.00	205.74	-150.23810	25	55.50186
10.00	205.74	-150.23820	26	55.50180
.00	198.12	-142.64300	27	55.47702
10.00	198.12	-142.64300	28	55.47696
.00	190.50	-135.02770	29	55.47229
10.00	190.50	-135.02760	30	55.47241
.00	182.88	-127.41310	31	55.46695
10.00	182.88	-127.41280	32	55.46716
.00	175.26	-119.80130	33	55.45874
10.00	175.26	-119.80100	34	55.45904
.00	167.64	-112.18960	35	55.45043
10.00	167.64	-112.18920	36	55.45079
.00	160.02	-104.57780	37	55.44219
10.00	160.02	-104.57740	38	55.44263
.00	152.40	-96.96582	39	55.43417
10.00	152.40	-96.96528	40	55.43471
.00	144.78	-89.35348	41	55.42652
10.00	144.78	-89.35278	42	55.42722
.00	137.16	-81.74067	43	55.41934
10.00	137.16	-81.73975	44	55.42025
.00	129.54	-74.87617	45	54.66382
10.00	129.54	-74.86759	46	54.67240
.00	121.92	-67.86843	47	54.05157
10.00	121.92	-67.85774	48	54.06226
.00	114.30	-60.72034	49	53.57966
10.00	114.30	-60.71072	50	53.58929
.00	106.68	-53.44432	51	53.23568
10.00	106.68	-53.43739	52	53.24261
.00	99.06	-46.05942	53	53.00060
10.00	99.06	-46.05584	54	53.00418
.00	91.44	-38.58812	55	52.85189
10.00	91.44	-38.58810	56	52.85192

.00	83.82	-30.96832	57	52.85168
10.00	83.82	-30.96832	58	52.85168
.00	76.20	-23.34840	59	52.85160
10.00	76.20	-23.34841	60	52.85159
.00	68.58	-15.72842	61	52.85158
10.00	68.58	-15.72843	62	52.85157
.00	60.96	-8.10841	63	52.85159
10.00	60.96	-8.10841	64	52.85159
.00	53.34	-.48840	65	52.85160
10.00	53.34	-.48841	66	52.85159
.00	45.72	7.13160	67	52.85161
10.00	45.72	7.13160	68	52.85160
.00	38.10	14.75161	69	52.85161
10.00	38.10	14.75161	70	52.85161
.00	30.48	22.37162	71	52.85161
10.00	30.48	22.37162	72	52.85161
.00	22.86	29.99162	73	52.85162
10.00	22.86	29.99162	74	52.85162
.00	15.24	37.61163	75	52.85163
10.00	15.24	37.61162	76	52.85162
.00	7.62	45.23163	77	52.85163
10.00	7.62	45.23162	78	52.85162
.00	.00	52.85163	79	52.85163
10.00	.00	52.85163	80	52.85163

TIME STEP NO. = 2226
TOTAL TIME = .46660E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.72607E+02

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-101.81800	1	142.02190
10.00	243.84	-101.70030	2	142.13960
.00	242.57	-101.54110	3	141.02890
10.00	242.57	-101.42450	4	141.14550
.00	241.30	-101.25690	5	140.04310
10.00	241.30	-101.14070	6	140.15920
.00	240.03	-100.96530	7	139.06470
10.00	240.03	-100.84890	8	139.18110
.00	238.76	-100.66620	9	138.09380
10.00	238.76	-100.54890	10	138.21110
.00	236.22	-100.04160	11	136.17830
10.00	236.22	-99.92597	12	136.29400
.00	233.68	-99.38467	13	134.29530
10.00	233.68	-99.26825	14	134.41170
.00	231.14	-98.69389	15	132.44610
10.00	231.14	-98.57436	16	132.56560
.00	228.60	-97.96801	17	130.63200
10.00	228.60	-97.84292	18	130.75710
.00	224.79	-96.80515	19	127.98480
10.00	224.79	-96.67670	20	128.11330
.00	220.98	-95.55556	21	125.42440
10.00	220.98	-95.41869	22	125.56130
.00	213.36	-92.73928	23	120.62070
10.00	213.36	-92.63602	24	120.72400
.00	205.74	-89.51745	25	116.22260
10.00	205.74	-89.44308	26	116.29690
.00	198.12	-85.86026	27	112.25970
10.00	198.12	-85.81698	28	112.30300
.00	190.50	-78.63060	29	111.86940
10.00	190.50	-78.60792	30	111.89210
.00	182.88	-71.30131	31	111.57870
10.00	182.88	-71.29171	32	111.58830
.00	175.26	-64.27018	33	110.98980
10.00	175.26	-64.26423	34	110.99580
.00	167.64	-57.11971	35	110.52030
10.00	167.64	-57.11820	36	110.52180
.00	160.02	-49.86577	37	110.15420
10.00	160.02	-49.86991	38	110.15010
.00	152.40	-42.52358	39	109.87640
10.00	152.40	-42.53509	40	109.86490
.00	144.78	-35.10743	41	109.67260
10.00	144.78	-35.12870	42	109.65130
.00	137.16	-27.63039	43	109.52960
10.00	137.16	-27.66466	44	109.49530
.00	129.54	-27.83306	45	101.70690
10.00	129.54	-27.85493	46	101.68510
.00	121.92	-28.05131	47	93.86870
10.00	121.92	-28.05550	48	93.86450
.00	114.30	-28.25395	49	86.04605
10.00	114.30	-28.23060	50	86.06942
.00	106.68	-28.35178	51	78.32822
10.00	106.68	-28.29357	52	78.38643
.00	99.06	-28.12975	53	70.93027
10.00	99.06	-28.05437	54	71.00565
.00	91.44	-27.14472	55	64.29529
10.00	91.44	-27.14147	56	64.29854

.00	83.82	-19.53437	57	64.28563
10.00	83.82	-19.53359	58	64.28641
.00	76.20	-11.91755	59	64.28244
10.00	76.20	-11.91762	60	64.28238
.00	68.58	-4.29824	61	64.28176
10.00	68.58	-4.29846	62	64.28154
.00	60.96	3.32169	63	64.28168
10.00	60.96	3.32152	64	64.28153
.00	53.34	10.94166	65	64.28166
10.00	53.34	10.94156	66	64.28156
.00	45.72	18.56165	67	64.28164
10.00	45.72	18.56159	68	64.28159
.00	38.10	26.18165	69	64.28164
10.00	38.10	26.18161	70	64.28161
.00	30.48	33.80165	71	64.28164
10.00	30.48	33.80162	72	64.28162
.00	22.86	41.42165	73	64.28164
10.00	22.86	41.42163	74	64.28163
.00	15.24	49.04165	75	64.28164
10.00	15.24	49.04163	76	64.28163
.00	7.62	56.66165	77	64.28164
10.00	7.62	56.66163	78	64.28164
.00	.00	64.28164	79	64.28164
10.00	.00	64.28164	80	64.28164

TIME STEP NO. = 2240
TOTAL TIME = .46660E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.20234E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-125.51690	1	118.32310
10.00	243.84	-125.83000	2	118.01000
.00	242.57	-126.02100	3	116.54900
10.00	242.57	-126.33360	4	116.23640
.00	241.30	-126.54090	5	114.75910
10.00	241.30	-126.85480	6	114.44520
.00	240.03	-127.07740	7	112.95260
10.00	240.03	-127.39420	8	112.63580
.00	238.76	-127.63110	9	111.12890
10.00	238.76	-127.95260	10	110.80740
.00	236.22	-128.79940	11	107.42060
10.00	236.22	-129.12260	12	107.09740
.00	233.68	-130.04580	13	103.63420
10.00	233.68	-130.37670	14	103.30330
.00	231.14	-131.37680	15	99.76322
10.00	231.14	-131.72170	16	99.41834
.00	228.60	-132.79930	17	95.80068
10.00	228.60	-133.16510	18	95.43490
.00	224.79	-135.13670	19	89.65325
10.00	224.79	-135.51980	20	89.27021
.00	220.98	-137.73060	21	83.24939
10.00	220.98	-138.14390	22	82.83614
.00	213.36	-143.96210	23	69.39786
10.00	213.36	-144.23410	24	69.12593
.00	205.74	-151.81200	25	53.92804
10.00	205.74	-151.84260	26	53.89737
.00	198.12	-161.86290	27	36.25705
10.00	198.12	-161.41470	28	36.70532
.00	190.50	-157.14020	29	33.35976
10.00	190.50	-156.88600	30	33.61404
.00	182.88	-151.83450	31	31.04552
10.00	182.88	-151.71140	32	31.16858
.00	175.26	-146.49670	33	28.76332
10.00	175.26	-146.43370	34	28.82631
.00	167.64	-140.67460	35	26.96541
10.00	167.64	-140.65560	36	26.98439
.00	160.02	-134.39860	37	25.62144
10.00	160.02	-134.41560	38	25.60436
.00	152.40	-127.70960	39	24.69035
10.00	152.40	-127.76100	40	24.63898
.00	144.78	-120.65660	41	24.12337
10.00	144.78	-120.74580	42	24.03415
.00	137.16	-113.29260	43	23.86742
10.00	137.16	-113.42890	44	23.73110
.00	129.54	-120.19850	45	9.34153
10.00	129.54	-120.35780	46	9.18214
.00	121.92	-114.41300	47	7.50698
10.00	121.92	-115.03280	48	6.88719
.00	114.30	-102.05370	49	12.24632
10.00	114.30	-102.56630	50	11.73371
.00	106.68	-88.62078	51	18.05922
10.00	106.68	-88.88667	52	17.79333
.00	99.06	-76.18648	53	22.87354
10.00	99.06	-76.28385	54	22.77617
.00	91.44	-65.11832	55	26.32169
10.00	91.44	-65.11867	56	26.32134

.00	83.82	-57.49080	57	26.32920
10.00	83.82	-57.49097	58	26.32903
.00	76.20	-49.86610	59	26.33390
10.00	76.20	-49.86617	60	26.33383
.00	68.58	-42.24334	61	26.33666
10.00	68.58	-42.24335	62	26.33665
.00	60.96	-34.62183	63	26.33817
10.00	60.96	-34.62182	64	26.33818
.00	53.34	-27.00109	65	26.33891
10.00	53.34	-27.00107	66	26.33893
.00	45.72	-19.38078	67	26.33922
10.00	45.72	-19.38075	68	26.33925
.00	38.10	-11.76066	69	26.33934
10.00	38.10	-11.76064	70	26.33935
.00	30.48	-4.14064	71	26.33936
10.00	30.48	-4.14062	72	26.33938
.00	22.86	3.47937	73	26.33937
10.00	22.86	3.47938	74	26.33938
.00	15.24	11.09937	75	26.33937
10.00	15.24	11.09938	76	26.33938
.00	7.62	18.71937	77	26.33937
10.00	7.62	18.71938	78	26.33938
.00	.00	26.33937	79	26.33937
10.00	.00	26.33938	80	26.33938

TIME STEP NO. = 2209
TOTAL TIME = .46660E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.14414E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-189.15160	1	54.68839
10.00	243.84	-189.15250	2	54.68747
.00	242.57	-187.88170	3	54.68832
10.00	242.57	-187.88260	4	54.68744
.00	241.30	-186.61180	5	54.68816
10.00	241.30	-186.61270	6	54.68730
.00	240.03	-185.34210	7	54.68788
10.00	240.03	-185.34290	8	54.68706
.00	238.76	-184.07250	9	54.68751
10.00	238.76	-184.07330	10	54.68672
.00	236.22	-181.53350	11	54.68649
10.00	236.22	-181.53420	12	54.68582
.00	233.68	-178.99480	13	54.68520
10.00	233.68	-178.99540	14	54.68460
.00	231.14	-176.45640	15	54.68362
10.00	231.14	-176.45690	16	54.68307
.00	228.60	-173.91820	17	54.68179
10.00	228.60	-173.91870	18	54.68127
.00	224.79	-170.11140	19	54.67857
10.00	224.79	-170.11190	20	54.67812
.00	220.98	-166.30510	21	54.67488
10.00	220.98	-166.30550	22	54.67447
.00	213.36	-158.69380	23	54.66620
10.00	213.36	-158.69400	24	54.66600
.00	205.74	-151.08360	25	54.65636
10.00	205.74	-151.08370	26	54.65627
.00	198.12	-143.47420	27	54.64575
10.00	198.12	-143.47430	28	54.64570
.00	190.50	-135.85620	29	54.64375
10.00	190.50	-135.85620	30	54.64377
.00	182.88	-128.23850	31	54.64149
10.00	182.88	-128.23840	32	54.64157
.00	175.26	-120.62190	33	54.63807
10.00	175.26	-120.62180	34	54.63819
.00	167.64	-113.00540	35	54.63458
10.00	167.64	-113.00530	36	54.63473
.00	160.02	-105.38890	37	54.63113
10.00	160.02	-105.38870	38	54.63131
.00	152.40	-97.77224	39	54.62776
10.00	152.40	-97.77201	40	54.62799
.00	144.78	-90.15544	41	54.62456
10.00	144.78	-90.15516	42	54.62485
.00	137.16	-82.53847	43	54.62154
10.00	137.16	-82.53809	44	54.62192
.00	129.54	-75.23478	45	54.30521
10.00	129.54	-75.23164	46	54.30835
.00	121.92	-67.86560	47	54.05440
10.00	121.92	-67.86190	48	54.05810
.00	114.30	-60.43342	49	53.86659
10.00	114.30	-60.43027	50	53.86973
.00	106.68	-52.94543	51	53.73457
10.00	106.68	-52.94330	52	53.73671
.00	99.06	-45.41148	53	53.64854
10.00	99.06	-45.41048	54	53.64954
.00	91.44	-37.84234	55	53.59767
10.00	91.44	-37.84233	56	53.59768

.00	83.82	-30.22238	57	53.59762
10.00	83.82	-30.22239	58	53.59761
.00	76.20	-22.60238	59	53.59761
10.00	76.20	-22.60239	60	53.59761
.00	68.58	-14.98237	61	53.59763
10.00	68.58	-14.98238	62	53.59762
.00	60.96	-7.36235	63	53.59765
10.00	60.96	-7.36236	64	53.59764
.00	53.34	.25765	65	53.59765
10.00	53.34	.25765	66	53.59765
.00	45.72	7.87766	67	53.59766
10.00	45.72	7.87766	68	53.59766
.00	38.10	15.49767	69	53.59767
10.00	38.10	15.49767	70	53.59767
.00	30.48	23.11768	71	53.59768
10.00	30.48	23.11768	72	53.59768
.00	22.86	30.73769	73	53.59769
10.00	22.86	30.73769	74	53.59769
.00	15.24	38.35769	75	53.59769
10.00	15.24	38.35770	76	53.59769
.00	7.62	45.97770	77	53.59769
10.00	7.62	45.97770	78	53.59769
.00	.00	53.59770	79	53.59770
10.00	.00	53.59770	80	53.59770

APPENDIX E2.4

RAMSAY CAPILLARY RISE

RAMSAY FLATS - CAPPILLARITY SCENARIO
EVAPORATION FROM HIGH GROUNDWATER

Several simulations were conducted of bare soil evaporation with groundwater fixed at different levels. The quantity of actual surface evaporation indicates the potential for upward flux from groundwater to occur.

RF11.DAT	DAY 0-360, GROUNDWATER = 8 FEET, E_o=0.278 CM/DAY
RF12.DAT	DAY 0-360, GROUNDWATER = 6 FEET, E_o=0.278 CM/DAY
RF13.DAT	DAY 0-360, GROUNDWATER = 4 FEET, E_o=0.278 CM/DAY
RF14. DAT	DAY 0-360, GROUNDWATER = 2 FEET, E_o=0.278 CM/DAY
RF15.DAT	DAY 360-370 RESTART FOR RF11.DAT
RF16.DAT	DAY 360-370 RESTART FOR RF12.DAT
RF17.DAT	DAY 360-370 RESTART FOR RF13.DAT
RF18.DAT	DAY 360-370 RESTART FOR RF14.DAT
RF19.DAT	DAY 0-360, GROUNDWATER = 3 FEET, E_o=0.278 CM/DAY
RF20.DAT	DAY 360-370 RESTART FOR RF19.DAT
RF21.DAT	DAY 0-360, GROUNDWATER = 2 FEET, E_o=0.6 CM/DAY
RF22.DAT	DAY 0-360, GROUNDWATER = 3 FEET, E_o=0.6 CM/DAY
RF23.DAT	DAY 0-360, GROUNDWATER = 4 FEET, E_o=0.6 CM/DAY
RF24.DAT	DAY 360-370 RESTART FOR RF21.DAT
RF26.DAT	DAY 360-370 RESTART FOR RF22.DAT
RF27.DAT	DAY 360-370 RESTART FOR RF23.DAT

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RF11.DAT RAMSAY FLATS - GROUNDWATER EVAP (8 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
   1   -4       0.0    243.84    -20.00
   2   -4      10.0    243.84    -20.00
   3    0       0.0    242.57    -20.00
   4    0      10.0    242.57    -20.00
   5    0       0.0    241.30    -20.00
   6    0      10.0    241.30    -20.00
   7    0       0.0    240.03    -20.00
   8    0      10.0    240.03    -20.00
   9    0       0.0    238.76    -20.00
  10    0      10.0    238.76    -20.00
  11    0       0.0    236.22    -20.00
  12    0      10.0    236.22    -20.00
  13    0       0.0    233.68    -20.00
  14    0      10.0    233.68    -20.00
  15    0       0.0    231.14    -20.00
  16    0      10.0    231.14    -20.00
  17    0       0.0    228.60    -20.00
  18    0      10.0    228.60    -20.00
  19    0       0.0    224.79    -20.00
  20    0      10.0    224.79    -20.00
  21    0       0.0    220.98    -20.00
  22    0      10.0    220.98    -20.00
  23    0       0.0    213.36    -20.00
  24    0      10.0    213.36    -20.00
  25    0       0.0    205.74    -20.00
  26    0      10.0    205.74    -20.00
  27    0       0.0    198.12    -20.00
  28    0      10.0    198.12    -20.00
  29    0       0.0    190.50    -20.00
  30    0      10.0    190.50    -20.00
  31    0       0.0    182.88    -20.00
  32    0      10.0    182.88    -20.00
  33    0       0.0    175.26    -20.00
  34    0      10.0    175.26    -20.00
  35    0       0.0    167.64    -20.00
  36    0      10.0    167.64    -20.00
  37    0       0.0    160.02    -20.00
  38    0      10.0    160.02    -20.00
  39    0       0.0    152.40    -20.00
  40    0      10.0    152.40    -20.00
  41    0       0.0    144.78    -20.00
  42    0      10.0    144.78    -20.00
  43    0       0.0    137.16    -20.00
  44    0      10.0    137.16    -20.00
  45    0       0.0    129.54    -20.00
  46    0      10.0    129.54    -20.00
  47    0       0.0    121.92    -20.00
  48    0      10.0    121.92    -20.00
  49    0       0.0    114.30    -20.00
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    50     0        10.0     114.30     -20.00
    51     0         0.0     106.68     -20.00
    52     0        10.0     106.68     -20.00
    53     0         0.0      99.06     -20.00
    54     0        10.0      99.06     -20.00
    55     0         0.0      91.44     -20.00
    56     0        10.0      91.44     -20.00
    57     0         0.0      83.82     -20.00
    58     0        10.0      83.82     -20.00
    59     0         0.0      76.20     -20.00
    60     0        10.0      76.20     -20.00
    61     0         0.0      68.58     -20.00
    62     0        10.0      68.58     -20.00
    63     0         0.0      60.96     -20.00
    64     0        10.0      60.96     -20.00
    65     0         0.0      53.34     -20.00
    66     0        10.0      53.34     -20.00
    67     0         0.0      45.72     -20.00
    68     0        10.0      45.72     -20.00
    69     0         0.0      38.10     -20.00
    70     0        10.0      38.10     -20.00
    71     0         0.0      30.48     -20.00
    72     0        10.0      30.48     -20.00
    73     0         0.0      22.86     -15.00
    74     0        10.0      22.86     -15.00
    75     0         0.0      15.24     -10.00
    76     0        10.0      15.24     -10.00
    77     0         0.0       7.62      -5.00
    78     0        10.0       7.62      -5.00
    79     1         0.0       0.00       0.00
    80     1        10.0       0.00       0.00
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
```

```
RF12.DAT RAMSAY FLATS - GROUNDWATER EVAP (6 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
   1   -4       0.0    243.84    -20.00
   2   -4      10.0    243.84    -20.00
   3    0       0.0    242.57    -20.00
   4    0      10.0    242.57    -20.00
   5    0       0.0    241.30    -20.00
   6    0      10.0    241.30    -20.00
   7    0       0.0    240.03    -20.00
   8    0      10.0    240.03    -20.00
   9    0       0.0    238.76    -20.00
  10    0      10.0    238.76    -20.00
  11    0       0.0    236.22    -20.00
  12    0      10.0    236.22    -20.00
  13    0       0.0    233.68    -20.00
  14    0      10.0    233.68    -20.00
  15    0       0.0    231.14    -20.00
  16    0      10.0    231.14    -20.00
  17    0       0.0    228.60    -20.00
  18    0      10.0    228.60    -20.00
  19    0       0.0    224.79    -20.00
  20    0      10.0    224.79    -20.00
  21    0       0.0    220.98    -20.00
  22    0      10.0    220.98    -20.00
  23    0       0.0    213.36    -20.00
  24    0      10.0    213.36    -20.00
  25    0       0.0    205.74    -20.00
  26    0      10.0    205.74    -20.00
  27    0       0.0    198.12    -20.00
  28    0      10.0    198.12    -20.00
  29    0       0.0    190.50    -20.00
  30    0      10.0    190.50    -20.00
  31    0       0.0    182.88    -20.00
  32    0      10.0    182.88    -20.00
  33    0       0.0    175.26    -20.00
  34    0      10.0    175.26    -20.00
  35    0       0.0    167.64    -20.00
  36    0      10.0    167.64    -20.00
  37    0       0.0    160.02    -20.00
  38    0      10.0    160.02    -20.00
  39    0       0.0    152.40    -20.00
  40    0      10.0    152.40    -20.00
  41    0       0.0    144.78    -20.00
  42    0      10.0    144.78    -20.00
  43    0       0.0    137.16    -20.00
  44    0      10.0    137.16    -20.00
  45    0       0.0    129.54    -20.00
  46    0      10.0    129.54    -20.00
  47    0       0.0    121.92    -20.00
  48    0      10.0    121.92    -20.00
  49    0       0.0    114.30    -20.00
```

```
   50     0        10.0      114.30     -20.00
   51     0         0.0      106.68     -20.00
   52     0        10.0      106.68     -20.00
   53     0         0.0       99.06     -20.00
   54     0        10.0       99.06     -20.00
   55     0         0.0       91.44     -20.00
   56     0        10.0       91.44     -20.00
   57     0         0.0       83.82     -20.00
   58     0        10.0       83.82     -20.00
   59     0         0.0       76.20     -20.00
   60     0        10.0       76.20     -20.00
   61     0         0.0       68.58     -20.00
   62     0        10.0       68.58     -20.00
   63     1         0.0       60.96       0.00
   64     1        10.0       60.96       0.00
   65     1         0.0       53.34       7.62
   66     1        10.0       53.34       7.62
   67     1         0.0       45.72      15.24
   68     1        10.0       45.72      15.24
   69     1         0.0       38.10      22.86
   70     1        10.0       38.10      22.86
   71     1         0.0       30.48      30.48
   72     1        10.0       30.48      30.48
   73     1         0.0       22.86      38.10
   74     1        10.0       22.86      38.10
   75     1         0.0       15.24      45.72
   76     1        10.0       15.24      45.72
   77     1         0.0        7.62      53.34
   78     1        10.0        7.62      53.34
   79     1         0.0        0.00      60.96
   80     1        10.0        0.00      60.96
    1     1     3     4     2     1
    2     3     5     6     4     1
    3     5     7     8     6     1
    4     7     9    10     8     1
    5     9    11    12    10     1
    6    11    13    14    12     1
    7    13    15    16    14     1
    8    15    17    18    16     1
    9    17    19    20    18     1
   10    19    21    22    20     1
   11    21    23    24    22     1
   12    23    25    26    24     1
   13    25    27    28    26     1
   14    27    29    30    28     2
   15    29    31    32    30     2
   16    31    33    34    32     3
   17    33    35    36    34     3
   18    35    37    38    36     3
   19    37    39    40    38     3
   20    39    41    42    40     3
   21    41    43    44    42     3
   22    43    45    46    44     4
   23    45    47    48    46     4
   24    47    49    50    48     4
   25    49    51    52    50     4
   26    51    53    54    52     4
   27    53    55    56    54     4
   28    55    57    58    56     2
   29    57    59    60    58     2
   30    59    61    62    60     2
   31    61    63    64    62     2
   32    63    65    66    64     2
   33    65    67    68    66     2
   34    67    69    70    68     2
   35    69    71    72    70     2
   36    71    73    74    72     2
   37    73    75    76    74     2
   38    75    77    78    76     2
   39    77    79    80    78     2
END
```

```
RF13.DAT RAMSAY FLATS - GROUNDWATER EVAP (4 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
    3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
    1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
    1   -4       0.0    243.84    -20.00
    2   -4      10.0    243.84    -20.00
    3    0       0.0    242.57    -20.00
    4    0      10.0    242.57    -20.00
    5    0       0.0    241.30    -20.00
    6    0      10.0    241.30    -20.00
    7    0       0.0    240.03    -20.00
    8    0      10.0    240.03    -20.00
    9    0       0.0    238.76    -20.00
   10    0      10.0    238.76    -20.00
   11    0       0.0    236.22    -20.00
   12    0      10.0    236.22    -20.00
   13    0       0.0    233.68    -20.00
   14    0      10.0    233.68    -20.00
   15    0       0.0    231.14    -20.00
   16    0      10.0    231.14    -20.00
   17    0       0.0    228.60    -20.00
   18    0      10.0    228.60    -20.00
   19    0       0.0    224.79    -20.00
   20    0      10.0    224.79    -20.00
   21    0       0.0    220.98    -20.00
   22    0      10.0    220.98    -20.00
   23    0       0.0    213.36    -20.00
   24    0      10.0    213.36    -20.00
   25    0       0.0    205.74    -20.00
   26    0      10.0    205.74    -20.00
   27    0       0.0    198.12    -20.00
   28    0      10.0    198.12    -20.00
   29    0       0.0    190.50    -20.00
   30    0      10.0    190.50    -20.00
   31    0       0.0    182.88    -20.00
   32    0      10.0    182.88    -20.00
   33    0       0.0    175.26    -20.00
   34    0      10.0    175.26    -20.00
   35    0       0.0    167.64    -20.00
   36    0      10.0    167.64    -20.00
   37    0       0.0    160.02    -20.00
   38    0      10.0    160.02    -20.00
   39    0       0.0    152.40    -20.00
   40    0      10.0    152.40    -20.00
   41    0       0.0    144.78    -15.00
   42    0      10.0    144.78    -15.00
   43    0       0.0    137.16    -10.00
   44    0      10.0    137.16    -10.00
   45    0       0.0    129.54     -5.00
   46    0      10.0    129.54     -5.00
   47    1       0.0    121.92      0.00
   48    1      10.0    121.92      0.00
   49    1       0.0    114.30      7.62
```

```
    50     1          10.0      114.30        7.62
    51     1           0.0      106.68       15.24
    52     1          10.0      106.68       15.24
    53     1           0.0       99.06       22.86
    54     1          10.0       99.06       22.86
    55     1           0.0       91.44       30.48
    56     1          10.0       91.44       30.48
    57     1           0.0       83.82       38.10
    58     1          10.0       83.82       38.10
    59     1           0.0       76.20       45.72
    60     1          10.0       76.20       45.72
    61     1           0.0       68.58       53.34
    62     1          10.0       68.58       53.34
    63     1           0.0       60.96       60.96
    64     1          10.0       60.96       60.96
    65     1           0.0       53.34       68.58
    66     1          10.0       53.34       68.58
    67     1           0.0       45.72       76.20
    68     1          10.0       45.72       76.20
    69     1           0.0       38.10       83.82
    70     1          10.0       38.10       83.82
    71     1           0.0       30.48       91.44
    72     1          10.0       30.48       91.44
    73     1           0.0       22.86       99.06
    74     1          10.0       22.86       99.06
    75     1           0.0       15.24      106.68
    76     1          10.0       15.24      106.68
    77     1           0.0        7.62      114.30
    78     1          10.0        7.62      114.30
    79     1           0.0        0.00      121.92
    80     1          10.0        0.00      121.92
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
```

```
RF14.DAT RAMSAY FLATS - GROUNDWATER EVAP (2 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
   1   -4       0.0     243.84    -20.00
   2   -4      10.0     243.84    -20.00
   3    0       0.0     242.57    -20.00
   4    0      10.0     242.57    -20.00
   5    0       0.0     241.30    -20.00
   6    0      10.0     241.30    -20.00
   7    0       0.0     240.03    -20.00
   8    0      10.0     240.03    -20.00
   9    0       0.0     238.76    -20.00
  10    0      10.0     238.76    -20.00
  11    0       0.0     236.22    -20.00
  12    0      10.0     236.22    -20.00
  13    0       0.0     233.68    -20.00
  14    0      10.0     233.68    -20.00
  15    0       0.0     231.14    -20.00
  16    0      10.0     231.14    -20.00
  17    0       0.0     228.60    -20.00
  18    0      10.0     228.60    -20.00
  19    0       0.0     224.79    -20.00
  20    0      10.0     224.79    -20.00
  21    0       0.0     220.98    -20.00
  22    0      10.0     220.98    -20.00
  23    0       0.0     213.36    -20.00
  24    0      10.0     213.36    -20.00
  25    0       0.0     205.74    -15.00
  26    0      10.0     205.74    -15.00
  27    0       0.0     198.12    -10.00
  28    0      10.0     198.12    -10.00
  29    0       0.0     190.50     -5.00
  30    0      10.0     190.50     -5.00
  31    1       0.0     182.88      0.00
  32    1      10.0     182.88      0.00
  33    1       0.0     175.26      7.62
  34    1      10.0     175.26      7.62
  35    1       0.0     167.64     15.24
  36    1      10.0     167.64     15.24
  37    1       0.0     160.02     22.86
  38    1      10.0     160.02     22.86
  39    1       0.0     152.40     30.48
  40    1      10.0     152.40     30.48
  41    1       0.0     144.78     38.10
  42    1      10.0     144.78     38.10
  43    1       0.0     137.16     45.72
  44    1      10.0     137.16     45.72
  45    1       0.0     129.54     53.34
  46    1      10.0     129.54     53.34
  47    1       0.0     121.92     60.96
  48    1      10.0     121.92     60.96
  49    1       0.0     114.30     68.58
```

```
    50     1          10.0      114.30       68.58
    51     1           0.0      106.68       76.20
    52     1          10.0      106.68       76.20
    53     1           0.0       99.06       83.82
    54     1          10.0       99.06       83.82
    55     1           0.0       91.44       91.44
    56     1          10.0       91.44       91.44
    57     1           0.0       83.82       99.06
    58     1          10.0       83.82       99.06
    59     1           0.0       76.20      106.68
    60     1          10.0       76.20      106.68
    61     1           0.0       68.58      114.30
    62     1          10.0       68.58      114.30
    63     1           0.0       60.96      121.92
    64     1          10.0       60.96      121.92
    65     1           0.0       53.34      129.54
    66     1          10.0       53.34      129.54
    67     1           0.0       45.72      137.16
    68     1          10.0       45.72      137.16
    69     1           0.0       38.10      144.78
    70     1          10.0       38.10      144.78
    71     1           0.0       30.48      152.40
    72     1          10.0       30.48      152.40
    73     1           0.0       22.86      160.02
    74     1          10.0       22.86      160.02
    75     1           0.0       15.24      167.64
    76     1          10.0       15.24      167.64
    77     1           0.0        7.62      175.26
    78     1          10.0        7.62      175.26
    79     1           0.0        0.00      182.88
    80     1          10.0        0.00      182.88
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
```

```
RESTART RF15.DAT// RAMSAY GW EVAP DAY 360 to 370 (8 ft)
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END


RESTART RF16.DAT// RAMSAY GW EVAP DAY 360 to 370 (6 ft)
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END


RESTART RF17.DAT// RAMSAY GW EVAP DAY 360 to 370 (4 ft)
    2    0
   20  1.00E+00  3.60E+03  1.05E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00  100
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END


RESTART RF18.DAT// RAMSAY GW EVAP DAY 360 to 370 (2 ft)
    2    0
   20  1.00E+01  2.16E+04  1.20E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END
```

```
RF19.DAT RAMSAY FLATS - GROUNDWATER EVAP (3 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-3.215E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
   1   -4       0.0     243.84     -20.00
   2   -4      10.0     243.84     -20.00
   3    0       0.0     242.57     -20.00
   4    0      10.0     242.57     -20.00
   5    0       0.0     241.30     -20.00
   6    0      10.0     241.30     -20.00
   7    0       0.0     240.03     -20.00
   8    0      10.0     240.03     -20.00
   9    0       0.0     238.76     -20.00
  10    0      10.0     238.76     -20.00
  11    0       0.0     236.22     -20.00
  12    0      10.0     236.22     -20.00
  13    0       0.0     233.68     -20.00
  14    0      10.0     233.68     -20.00
  15    0       0.0     231.14     -20.00
  16    0      10.0     231.14     -20.00
  17    0       0.0     228.60     -20.00
  18    0      10.0     228.60     -20.00
  19    0       0.0     224.79     -20.00
  20    0      10.0     224.79     -20.00
  21    0       0.0     220.98     -20.00
  22    0      10.0     220.98     -20.00
  23    0       0.0     213.36     -20.00
  24    0      10.0     213.36     -20.00
  25    0       0.0     205.74     -20.00
  26    0      10.0     205.74     -20.00
  27    0       0.0     198.12     -20.00
  28    0      10.0     198.12     -20.00
  29    0       0.0     190.50     -20.00
  30    0      10.0     190.50     -20.00
  31    0       0.0     182.88     -20.00
  32    0      10.0     182.88     -20.00
  33    0       0.0     175.26     -15.00
  34    0      10.0     175.26     -15.00
  35    0       0.0     167.64     -10.00
  36    0      10.0     167.64     -10.00
  37    0       0.0     160.02      -5.00
  38    0      10.0     160.02      -5.00
  39    1       0.0     152.40       0.00
  40    1      10.0     152.40       0.00
  41    1       0.0     144.78       7.62
  42    1      10.0     144.78       7.62
  43    1       0.0     137.16      15.24
  44    1      10.0     137.16      15.24
  45    1       0.0     129.54      22.86
  46    1      10.0     129.54      22.86
  47    1       0.0     121.92      30.48
  48    1      10.0     121.92      30.48
  49    1       0.0     114.30      38.10
```

```
    50    1        10.0      114.30      38.10
    51    1         0.0      106.68      45.72
    52    1        10.0      106.68      45.72
    53    1         0.0       99.06      53.34
    54    1        10.0       99.06      53.34
    55    1         0.0       91.44      60.96
    56    1        10.0       91.44      60.96
    57    1         0.0       83.82      68.58
    58    1        10.0       83.82      68.58
    59    1         0.0       76.20      76.20
    60    1        10.0       76.20      76.20
    61    1         0.0       68.58      83.82
    62    1        10.0       68.58      83.82
    63    1         0.0       60.96      91.44
    64    1        10.0       60.96      91.44
    65    1         0.0       53.34      99.06
    66    1        10.0       53.34      99.06
    67    1         0.0       45.72     106.68
    68    1        10.0       45.72     106.68
    69    1         0.0       38.10     114.30
    70    1        10.0       38.10     114.30
    71    1         0.0       30.48     121.92
    72    1        10.0       30.48     121.92
    73    1         0.0       22.86     129.54
    74    1        10.0       22.86     129.54
    75    1         0.0       15.24     137.16
    76    1        10.0       15.24     137.16
    77    1         0.0        7.62     144.78
    78    1        10.0        7.62     144.78
    79    1         0.0        0.00     152.40
    80    1        10.0        0.00     152.40
     1    1    3    4    2    1
     2    3    5    6    4    1
     3    5    7    8    6    1
     4    7    9   10    8    1
     5    9   11   12   10    1
     6   11   13   14   12    1
     7   13   15   16   14    1
     8   15   17   18   16    1
     9   17   19   20   18    1
    10   19   21   22   20    1
    11   21   23   24   22    1
    12   23   25   26   24    1
    13   25   27   28   26    1
    14   27   29   30   28    2
    15   29   31   32   30    2
    16   31   33   34   32    3
    17   33   35   36   34    3
    18   35   37   38   36    3
    19   37   39   40   38    3
    20   39   41   42   40    3
    21   41   43   44   42    3
    22   43   45   46   44    4
    23   45   47   48   46    4
    24   47   49   50   48    4
    25   49   51   52   50    4
    26   51   53   54   52    4
    27   53   55   56   54    4
    28   55   57   58   56    2
    29   57   59   60   58    2
    30   59   61   62   60    2
    31   61   63   64   62    2
    32   63   65   66   64    2
    33   65   67   68   66    2
    34   67   69   70   68    2
    35   69   71   72   70    2
    36   71   73   74   72    2
    37   73   75   76   74    2
    38   75   77   78   76    2
    39   77   79   80   78    2
END
```

```
RESTART RF20.DAT// RAMSAY GW EVAP DAY 360 to 370 (3 ft)
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END
```

```
RF21.DAT RAMSAY FLATS - GROUNDWATER EVAP (2 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-6.944E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
   1   -4      0.0    243.84    -20.00
   2   -4     10.0    243.84    -20.00
   3    0      0.0    242.57    -20.00
   4    0     10.0    242.57    -20.00
   5    0      0.0    241.30    -20.00
   6    0     10.0    241.30    -20.00
   7    0      0.0    240.03    -20.00
   8    0     10.0    240.03    -20.00
   9    0      0.0    238.76    -20.00
  10    0     10.0    238.76    -20.00
  11    0      0.0    236.22    -20.00
  12    0     10.0    236.22    -20.00
  13    0      0.0    233.68    -20.00
  14    0     10.0    233.68    -20.00
  15    0      0.0    231.14    -20.00
  16    0     10.0    231.14    -20.00
  17    0      0.0    228.60    -20.00
  18    0     10.0    228.60    -20.00
  19    0      0.0    224.79    -20.00
  20    0     10.0    224.79    -20.00
  21    0      0.0    220.98    -20.00
  22    0     10.0    220.98    -20.00
  23    0      0.0    213.36    -20.00
  24    0     10.0    213.36    -20.00
  25    0      0.0    205.74    -15.00
  26    0     10.0    205.74    -15.00
  27    0      0.0    198.12    -10.00
  28    0     10.0    198.12    -10.00
  29    0      0.0    190.50     -5.00
  30    0     10.0    190.50     -5.00
  31    1      0.0    182.88      0.00
  32    1     10.0    182.88      0.00
  33    1      0.0    175.26      7.62
  34    1     10.0    175.26      7.62
  35    1      0.0    167.64     15.24
  36    1     10.0    167.64     15.24
  37    1      0.0    160.02     22.86
  38    1     10.0    160.02     22.86
  39    1      0.0    152.40     30.48
  40    1     10.0    152.40     30.48
  41    1      0.0    144.78     38.10
  42    1     10.0    144.78     38.10
  43    1      0.0    137.16     45.72
  44    1     10.0    137.16     45.72
  45    1      0.0    129.54     53.34
  46    1     10.0    129.54     53.34
  47    1      0.0    121.92     60.96
  48    1     10.0    121.92     60.96
  49    1      0.0    114.30     68.58
```

```
   50     1          10.0      114.30       68.58
   51     1           0.0      106.68       76.20
   52     1          10.0      106.68       76.20
   53     1           0.0       99.06       83.82
   54     1          10.0       99.06       83.82
   55     1           0.0       91.44       91.44
   56     1          10.0       91.44       91.44
   57     1           0.0       83.82       99.06
   58     1          10.0       83.82       99.06
   59     1           0.0       76.20      106.68
   60     1          10.0       76.20      106.68
   61     1           0.0       68.58      114.30
   62     1          10.0       68.58      114.30
   63     1           0.0       60.96      121.92
   64     1          10.0       60.96      121.92
   65     1           0.0       53.34      129.54
   66     1          10.0       53.34      129.54
   67     1           0.0       45.72      137.16
   68     1          10.0       45.72      137.16
   69     1           0.0       38.10      144.78
   70     1          10.0       38.10      144.78
   71     1           0.0       30.48      152.40
   72     1          10.0       30.48      152.40
   73     1           0.0       22.86      160.02
   74     1          10.0       22.86      160.02
   75     1           0.0       15.24      167.64
   76     1          10.0       15.24      167.64
   77     1           0.0        7.62      175.26
   78     1          10.0        7.62      175.26
   79     1           0.0        0.00      182.88
   80     1          10.0        0.00      182.88
    1     1     3     4     2     1
    2     3     5     6     4     1
    3     5     7     8     6     1
    4     7     9    10     8     1
    5     9    11    12    10     1
    6    11    13    14    12     1
    7    13    15    16    14     1
    8    15    17    18    16     1
    9    17    19    20    18     1
   10    19    21    22    20     1
   11    21    23    24    22     1
   12    23    25    26    24     1
   13    25    27    28    26     1
   14    27    29    30    28     2
   15    29    31    32    30     2
   16    31    33    34    32     3
   17    33    35    36    34     3
   18    35    37    38    36     3
   19    37    39    40    38     3
   20    39    41    42    40     3
   21    41    43    44    42     3
   22    43    45    46    44     4
   23    45    47    48    46     4
   24    47    49    50    48     4
   25    49    51    52    50     4
   26    51    53    54    52     4
   27    53    55    56    54     4
   28    55    57    58    56     2
   29    57    59    60    58     2
   30    59    61    62    60     2
   31    61    63    64    62     2
   32    63    65    66    64     2
   33    65    67    68    66     2
   34    67    69    70    68     2
   35    69    71    72    70     2
   36    71    73    74    72     2
   37    73    75    76    74     2
   38    75    77    78    76     2
   39    77    79    80    78     2
END
```

```
RF22.DAT RAMSAY FLATS - GROUNDWATER EVAP (3 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-6.944E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
   3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
   1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
   1   -4       0.0     243.84    -20.00
   2   -4      10.0     243.84    -20.00
   3    0       0.0     242.57    -20.00
   4    0      10.0     242.57    -20.00
   5    0       0.0     241.30    -20.00
   6    0      10.0     241.30    -20.00
   7    0       0.0     240.03    -20.00
   8    0      10.0     240.03    -20.00
   9    0       0.0     238.76    -20.00
  10    0      10.0     238.76    -20.00
  11    0       0.0     236.22    -20.00
  12    0      10.0     236.22    -20.00
  13    0       0.0     233.68    -20.00
  14    0      10.0     233.68    -20.00
  15    0       0.0     231.14    -20.00
  16    0      10.0     231.14    -20.00
  17    0       0.0     228.60    -20.00
  18    0      10.0     228.60    -20.00
  19    0       0.0     224.79    -20.00
  20    0      10.0     224.79    -20.00
  21    0       0.0     220.98    -20.00
  22    0      10.0     220.98    -20.00
  23    0       0.0     213.36    -20.00
  24    0      10.0     213.36    -20.00
  25    0       0.0     205.74    -20.00
  26    0      10.0     205.74    -20.00
  27    0       0.0     198.12    -20.00
  28    0      10.0     198.12    -20.00
  29    0       0.0     190.50    -20.00
  30    0      10.0     190.50    -20.00
  31    0       0.0     182.88    -20.00
  32    0      10.0     182.88    -20.00
  33    0       0.0     175.26    -15.00
  34    0      10.0     175.26    -15.00
  35    0       0.0     167.64    -10.00
  36    0      10.0     167.64    -10.00
  37    0       0.0     160.02     -5.00
  38    0      10.0     160.02     -5.00
  39    1       0.0     152.40      0.00
  40    1      10.0     152.40      0.00
  41    1       0.0     144.78      7.62
  42    1      10.0     144.78      7.62
  43    1       0.0     137.16     15.24
  44    1      10.0     137.16     15.24
  45    1       0.0     129.54     22.86
  46    1      10.0     129.54     22.86
  47    1       0.0     121.92     30.48
  48    1      10.0     121.92     30.48
  49    1       0.0     114.30     38.10
```

```
    50     1        10.0     114.30      38.10
    51     1         0.0     106.68      45.72
    52     1        10.0     106.68      45.72
    53     1         0.0      99.06      53.34
    54     1        10.0      99.06      53.34
    55     1         0.0      91.44      60.96
    56     1        10.0      91.44      60.96
    57     1         0.0      83.82      68.58
    58     1        10.0      83.82      68.58
    59     1         0.0      76.20      76.20
    60     1        10.0      76.20      76.20
    61     1         0.0      68.58      83.82
    62     1        10.0      68.58      83.82
    63     1         0.0      60.96      91.44
    64     1        10.0      60.96      91.44
    65     1         0.0      53.34      99.06
    66     1        10.0      53.34      99.06
    67     1         0.0      45.72     106.68
    68     1        10.0      45.72     106.68
    69     1         0.0      38.10     114.30
    70     1        10.0      38.10     114.30
    71     1         0.0      30.48     121.92
    72     1        10.0      30.48     121.92
    73     1         0.0      22.86     129.54
    74     1        10.0      22.86     129.54
    75     1         0.0      15.24     137.16
    76     1        10.0      15.24     137.16
    77     1         0.0       7.62     144.78
    78     1        10.0       7.62     144.78
    79     1         0.0       0.00     152.40
    80     1        10.0       0.00     152.40
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
```

```
RF23.DAT RAMSAY FLATS - GROUNDWATER EVAP (4 ft)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
-6.944E-06 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.00E-01  1.00E-01  1.00E-01  2.50E-01  2.50E-01  1.00E+00  1.00E+00  1.00E+00
 1.00E+00  1.00E+00  1.00E+00  1.00E+00
    3    3    3    3    2    2    1    1    1    1    1    1    1    1    1
1
    1    1    1    1
 1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+01   40
 1.00E+00  1.00E+00
 5.00E-05  5.00E-04  5.90E-01  0.00E+00  3.50E-01  1.43E+00 2.600E-02
1
 5.00E-04  5.00E-03  5.40E-01  0.00E+00  6.00E-02  1.64E+00 2.900E-02
1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02
1
 1.00E-05  1.00E-04  6.00E-01  0.00E+00  3.80E-01  1.32E+00 5.100E-02
1
    1   -4       0.0     243.84    -20.00
    2   -4      10.0     243.84    -20.00
    3    0       0.0     242.57    -20.00
    4    0      10.0     242.57    -20.00
    5    0       0.0     241.30    -20.00
    6    0      10.0     241.30    -20.00
    7    0       0.0     240.03    -20.00
    8    0      10.0     240.03    -20.00
    9    0       0.0     238.76    -20.00
   10    0      10.0     238.76    -20.00
   11    0       0.0     236.22    -20.00
   12    0      10.0     236.22    -20.00
   13    0       0.0     233.68    -20.00
   14    0      10.0     233.68    -20.00
   15    0       0.0     231.14    -20.00
   16    0      10.0     231.14    -20.00
   17    0       0.0     228.60    -20.00
   18    0      10.0     228.60    -20.00
   19    0       0.0     224.79    -20.00
   20    0      10.0     224.79    -20.00
   21    0       0.0     220.98    -20.00
   22    0      10.0     220.98    -20.00
   23    0       0.0     213.36    -20.00
   24    0      10.0     213.36    -20.00
   25    0       0.0     205.74    -20.00
   26    0      10.0     205.74    -20.00
   27    0       0.0     198.12    -20.00
   28    0      10.0     198.12    -20.00
   29    0       0.0     190.50    -20.00
   30    0      10.0     190.50    -20.00
   31    0       0.0     182.88    -20.00
   32    0      10.0     182.88    -20.00
   33    0       0.0     175.26    -20.00
   34    0      10.0     175.26    -20.00
   35    0       0.0     167.64    -20.00
   36    0      10.0     167.64    -20.00
   37    0       0.0     160.02    -20.00
   38    0      10.0     160.02    -20.00
   39    0       0.0     152.40    -20.00
   40    0      10.0     152.40    -20.00
   41    0       0.0     144.78    -15.00
   42    0      10.0     144.78    -15.00
   43    0       0.0     137.16    -10.00
   44    0      10.0     137.16    -10.00
   45    0       0.0     129.54     -5.00
   46    0      10.0     129.54     -5.00
   47    1       0.0     121.92      0.00
   48    1      10.0     121.92      0.00
   49    1       0.0     114.30      7.62
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    50     1        10.0      114.30        7.62
    51     1         0.0      106.68       15.24
    52     1        10.0      106.68       15.24
    53     1         0.0       99.06       22.86
    54     1        10.0       99.06       22.86
    55     1         0.0       91.44       30.48
    56     1        10.0       91.44       30.48
    57     1         0.0       83.82       38.10
    58     1        10.0       83.82       38.10
    59     1         0.0       76.20       45.72
    60     1        10.0       76.20       45.72
    61     1         0.0       68.58       53.34
    62     1        10.0       68.58       53.34
    63     1         0.0       60.96       60.96
    64     1        10.0       60.96       60.96
    65     1         0.0       53.34       68.58
    66     1        10.0       53.34       68.58
    67     1         0.0       45.72       76.20
    68     1        10.0       45.72       76.20
    69     1         0.0       38.10       83.82
    70     1        10.0       38.10       83.82
    71     1         0.0       30.48       91.44
    72     1        10.0       30.48       91.44
    73     1         0.0       22.86       99.06
    74     1        10.0       22.86       99.06
    75     1         0.0       15.24      106.68
    76     1        10.0       15.24      106.68
    77     1         0.0        7.62      114.30
    78     1        10.0        7.62      114.30
    79     1         0.0        0.00      121.92
    80     1        10.0        0.00      121.92
     1     1     3     4     2     1
     2     3     5     6     4     1
     3     5     7     8     6     1
     4     7     9    10     8     1
     5     9    11    12    10     1
     6    11    13    14    12     1
     7    13    15    16    14     1
     8    15    17    18    16     1
     9    17    19    20    18     1
    10    19    21    22    20     1
    11    21    23    24    22     1
    12    23    25    26    24     1
    13    25    27    28    26     1
    14    27    29    30    28     2
    15    29    31    32    30     2
    16    31    33    34    32     3
    17    33    35    36    34     3
    18    35    37    38    36     3
    19    37    39    40    38     3
    20    39    41    42    40     3
    21    41    43    44    42     3
    22    43    45    46    44     4
    23    45    47    48    46     4
    24    47    49    50    48     4
    25    49    51    52    50     4
    26    51    53    54    52     4
    27    53    55    56    54     4
    28    55    57    58    56     2
    29    57    59    60    58     2
    30    59    61    62    60     2
    31    61    63    64    62     2
    32    63    65    66    64     2
    33    65    67    68    66     2
    34    67    69    70    68     2
    35    69    71    72    70     2
    36    71    73    74    72     2
    37    73    75    76    74     2
    38    75    77    78    76     2
    39    77    79    80    78     2
END
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RESTART RF24.DAT// RAMSAY GW EVAP DAY 360 to 370 (2 ft)
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END


RESTART RF25.DAT// RAMSAY GW EVAP DAY 360 to 370 (3 ft)
    2    0
   20  1.00E+01  6.00E+01  1.10E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END


RESTART RF26.DAT// RAMSAY GW EVAP DAY 360 to 370 (4 ft)
    2    0
   20  1.00E+01  3.60E+03  1.05E+00 3.196E+07  1.00E+00  0.00E+00  0.00E+00   40
-3.215E-06 -1.50E+04  1.00E-01
    0  0.00E+00

END
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TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.31626E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-4395.57700	3	-4153.00800
10.00	242.57	-3676.54600	4	-3433.97600
.00	241.30	-2578.52100	5	-2337.22100
10.00	241.30	-2083.44800	6	-1842.14800
.00	240.03	-1890.73400	7	-1650.70400
10.00	240.03	-1564.79800	8	-1324.76800
.00	238.76	-1529.05700	9	-1290.29700
10.00	238.76	-1307.17900	10	-1068.41900
.00	236.22	-1180.96000	11	-944.74010
10.00	236.22	-1037.10700	12	-800.88730
.00	233.68	-983.34590	13	-749.66590
10.00	233.68	-887.53250	14	-653.85240
.00	231.14	-854.77430	15	-623.63430
10.00	231.14	-789.74870	16	-558.60860
.00	228.60	-763.63350	17	-535.03360
10.00	228.60	-719.35850	18	-490.75850
.00	224.79	-669.30360	19	-444.51360
10.00	224.79	-641.88010	20	-417.09010
.00	220.98	-601.52040	21	-380.54050
10.00	220.98	-585.26830	22	-364.28830
.00	213.36	-513.47120	23	-300.11120
10.00	213.36	-504.48340	24	-291.12340
.00	205.74	-453.65400	25	-247.91400
10.00	205.74	-449.08060	26	-243.34060
.00	198.12	-409.56850	27	-211.44850
10.00	198.12	-407.82040	28	-209.70040
.00	190.50	-393.46510	29	-202.96510
10.00	190.50	-392.50590	30	-202.00590
.00	182.88	-378.95010	31	-196.07010
10.00	182.88	-378.48620	32	-195.60610
.00	175.26	-368.21180	33	-192.95180
10.00	175.26	-367.95630	34	-192.69630
.00	167.64	-357.95600	35	-190.31600
10.00	167.64	-357.83960	36	-190.19960
.00	160.02	-348.11790	37	-188.09790
10.00	160.02	-348.10770	38	-188.08770
.00	152.40	-338.64300	39	-186.24300
10.00	152.40	-338.73250	40	-186.33250
.00	144.78	-329.48310	41	-184.70320
10.00	144.78	-329.68830	42	-184.90830
.00	137.16	-320.59290	43	-183.43290
10.00	137.16	-320.95460	44	-183.79460
.00	129.54	-223.91470	45	-94.37472
10.00	129.54	-219.71830	46	-90.17832
.00	121.92	-175.05750	47	-53.13753
10.00	121.92	-172.26990	48	-50.34988
.00	114.30	-144.39820	49	-30.09819
10.00	114.30	-142.86680	50	-28.56676
.00	106.68	-122.51480	51	-15.83483
10.00	106.68	-121.76270	52	-15.08272
.00	99.06	-105.51580	53	-6.45584
10.00	99.06	-105.22680	54	-6.16684
.00	91.44	-91.50317	55	-.06316
10.00	91.44	-91.50110	56	-.06109

.00	83.82	-83.86465	57	-.04464
10.00	83.82	-83.86370	58	-.04370
.00	76.20	-76.23084	59	-.03084
10.00	76.20	-76.23047	60	-.03047
.00	68.58	-68.60074	61	-.02074
10.00	68.58	-68.60066	62	-.02066
.00	60.96	-60.97352	63	-.01352
10.00	60.96	-60.97356	64	-.01356
.00	53.34	-53.34851	65	-.00851
10.00	53.34	-53.34858	66	-.00858
.00	45.72	-45.72513	67	-.00513
10.00	45.72	-45.72521	68	-.00521
.00	38.10	-38.10294	69	-.00294
10.00	38.10	-38.10300	70	-.00300
.00	30.48	-30.48159	71	-.00159
10.00	30.48	-30.48163	72	-.00163
.00	22.86	-22.86078	73	-.00078
10.00	22.86	-22.86081	74	-.00081
.00	15.24	-15.24033	75	-.00033
10.00	15.24	-15.24035	76	-.00035
.00	7.62	-7.62010	77	-.00010
10.00	7.62	-7.62011	78	-.00011
.00	.00	.00000	79	.00000
10.00	.00	.00000	80	.00000

TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.20343E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-3754.59400	3	-3512.02300
10.00	242.57	-3128.09900	4	-2885.52900
.00	241.30	-2100.25800	5	-1858.95800
10.00	241.30	-1678.31500	6	-1437.01500
.00	240.03	-1509.14500	7	-1269.11500
10.00	240.03	-1236.05200	8	-996.02250
.00	238.76	-1206.87800	9	-968.11790
10.00	238.76	-1023.45200	10	-784.69210
.00	236.22	-922.60320	11	-686.38320
10.00	236.22	-805.42400	12	-569.20390
.00	233.68	-763.01870	13	-529.33870
10.00	233.68	-685.87320	14	-452.19320
.00	231.14	-659.83720	15	-428.69720
10.00	231.14	-608.02100	16	-376.88100
.00	228.60	-586.95290	17	-358.35290
10.00	228.60	-552.03110	18	-323.43110
.00	224.79	-511.67940	19	-286.88940
10.00	224.79	-490.36780	20	-265.57790
.00	220.98	-457.56660	21	-236.58660
10.00	220.98	-445.16830	22	-224.18840
.00	213.36	-387.04340	23	-173.68340
10.00	213.36	-380.37000	24	-167.01000
.00	205.74	-338.72230	25	-132.98230
10.00	205.74	-335.43790	26	-129.69790
.00	198.12	-302.73930	27	-104.61930
10.00	198.12	-301.56950	28	-103.44950
.00	190.50	-289.43440	29	-98.93436
10.00	190.50	-288.80690	30	-98.30689
.00	182.88	-277.06440	31	-94.18437
10.00	182.88	-276.76640	32	-93.88642
.00	175.26	-266.51460	33	-91.25456
10.00	175.26	-266.41190	34	-91.15191
.00	167.64	-256.29450	35	-88.65447
10.00	167.64	-256.34450	36	-88.70451
.00	160.02	-246.35460	37	-86.33461
10.00	160.02	-246.55260	38	-86.53257
.00	152.40	-236.65120	39	-84.25116
10.00	152.40	-237.02520	40	-84.62517
.00	144.78	-227.14190	41	-82.36189
10.00	144.78	-227.75570	42	-82.97572
.00	137.16	-217.78220	43	-80.62218
10.00	137.16	-218.74530	44	-81.58529
.00	129.54	-127.08780	45	2.45221
10.00	129.54	-123.15620	46	6.38377
.00	121.92	-89.01078	47	32.90923
10.00	121.92	-86.84198	48	35.07802
.00	114.30	-67.11225	49	47.18776
10.00	114.30	-66.13699	50	48.16301
.00	106.68	-52.01500	51	54.66500
10.00	106.68	-51.63578	52	55.04422
.00	99.06	-40.31608	53	58.74392
10.00	99.06	-40.20734	54	58.85266
.00	91.44	-30.48709	55	60.95291
10.00	91.44	-30.48680	56	60.95321

.00	83.82	-22.86347	57	60.95653
10.00	83.82	-22.86339	58	60.95660
.00	76.20	-15.24147	59	60.95853
10.00	76.20	-15.24147	60	60.95853
.00	68.58	-7.62043	61	60.95957
10.00	68.58	-7.62045	62	60.95955
.00	60.96	.00000	63	60.96000
10.00	60.96	.00000	64	60.96000
.00	53.34	7.62000	65	60.96000
10.00	53.34	7.62000	66	60.96000
.00	45.72	15.24000	67	60.96000
10.00	45.72	15.24000	68	60.96000
.00	38.10	22.86000	69	60.96000
10.00	38.10	22.86000	70	60.96000
.00	30.48	30.48000	71	60.96000
10.00	30.48	30.48000	72	60.96000
.00	22.86	38.10000	73	60.96000
10.00	22.86	38.10000	74	60.96000
.00	15.24	45.72000	75	60.96000
10.00	15.24	45.72000	76	60.96000
.00	7.62	53.34000	77	60.96000
10.00	7.62	53.34000	78	60.96000
.00	.00	60.96000	79	60.96000
10.00	.00	60.96000	80	60.96000

TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.85976E+02

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1898.47900	3	-1655.90900
10.00	242.57	-1581.35400	4	-1338.78400
.00	241.30	-872.10680	5	-630.80680
10.00	241.30	-677.46010	6	-436.16010
.00	240.03	-579.49880	7	-339.46880
10.00	240.03	-460.44130	8	-220.41130
.00	238.76	-444.47320	9	-205.71320
10.00	238.76	-368.16140	10	-129.40140
.00	236.22	-327.30090	11	-91.08091
10.00	236.22	-280.71140	12	-44.49142
.00	233.68	-263.98160	13	-30.30160
10.00	233.68	-234.42760	14	-.74759
.00	231.14	-223.86570	15	7.27429
10.00	231.14	-204.68490	16	26.45505
.00	228.60	-195.81400	17	32.78603
10.00	228.60	-183.34740	18	45.25256
.00	224.79	-166.96940	19	57.82063
10.00	224.79	-159.76440	20	65.02563
.00	220.98	-146.13410	21	74.84591
10.00	220.98	-142.25780	22	78.72217
.00	213.36	-118.51580	23	94.84420
10.00	213.36	-116.66230	24	96.69768
.00	205.74	-98.89382	25	106.84620
10.00	205.74	-98.13523	26	107.60480
.00	198.12	-83.61754	27	114.50250
10.00	198.12	-83.48134	28	114.63870
.00	190.50	-75.34735	29	115.15260
10.00	190.50	-75.26788	30	115.23210
.00	182.88	-67.26852	31	115.61150
10.00	182.88	-67.21110	32	115.66890
.00	175.26	-58.71728	33	116.54270
10.00	175.26	-58.70578	34	116.55420
.00	167.64	-50.39049	35	117.24950
10.00	167.64	-50.40750	36	117.23250
.00	160.02	-42.24240	37	117.77760
10.00	160.02	-42.28033	38	117.73970
.00	152.40	-34.23559	39	118.16440
10.00	152.40	-34.29282	40	118.10720
.00	144.78	-26.33912	41	118.44090
10.00	144.78	-26.41791	42	118.36210
.00	137.16	-18.52731	43	118.63270
10.00	137.16	-18.63269	44	118.52730
.00	129.54	-7.90470	45	121.63530
10.00	129.54	-7.96459	46	121.57540
.00	121.92	.00000	47	121.92000
10.00	121.92	.00000	48	121.92000
.00	114.30	7.62000	49	121.92000
10.00	114.30	7.62000	50	121.92000
.00	106.68	15.24000	51	121.92000
10.00	106.68	15.24000	52	121.92000
.00	99.06	22.86000	53	121.92000
10.00	99.06	22.86000	54	121.92000
.00	91.44	30.48000	55	121.92000
10.00	91.44	30.48000	56	121.92000

.00	83.82	38.10000	57	121.92000
10.00	83.82	38.10000	58	121.92000
.00	76.20	45.72000	59	121.92000
10.00	76.20	45.72000	60	121.92000
.00	68.58	53.34000	61	121.92000
10.00	68.58	53.34000	62	121.92000
.00	60.96	60.96000	63	121.92000
10.00	60.96	60.96000	64	121.92000
.00	53.34	68.58000	65	121.92000
10.00	53.34	68.58000	66	121.92000
.00	45.72	76.20000	67	121.92000
10.00	45.72	76.20000	68	121.92000
.00	38.10	83.82000	69	121.92000
10.00	38.10	83.82000	70	121.92000
.00	30.48	91.44001	71	121.92000
10.00	30.48	91.44001	72	121.92000
.00	22.86	99.06001	73	121.92000
10.00	22.86	99.06001	74	121.92000
.00	15.24	106.68000	75	121.92000
10.00	15.24	106.68000	76	121.92000
.00	7.62	114.30000	77	121.92000
10.00	7.62	114.30000	78	121.92000
.00	.00	121.92000	79	121.92000
10.00	.00	121.92000	80	121.92000

TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.99361E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-74.25703	1	169.58300
10.00	243.84	-74.76121	2	169.07880
.00	242.57	-71.92724	3	170.64280
10.00	242.57	-72.39887	4	170.17110
.00	241.30	-69.67559	5	171.62440
10.00	241.30	-70.12058	6	171.17940
.00	240.03	-67.49560	7	172.53440
10.00	240.03	-67.91908	8	172.11090
.00	238.76	-65.38143	9	173.37860
10.00	238.76	-65.78790	10	172.97210
.00	236.22	-61.35225	11	174.86770
10.00	236.22	-61.69869	12	174.52130
.00	233.68	-57.52636	13	176.15360
10.00	233.68	-57.83067	14	175.84930
.00	231.14	-53.87507	15	177.26490
10.00	231.14	-54.15098	16	176.98900
.00	228.60	-50.37436	17	178.22560
10.00	228.60	-50.63256	18	177.96740
.00	224.79	-45.38181	19	179.40820
10.00	224.79	-45.59970	20	179.19030
.00	220.98	-40.62393	21	180.35610
10.00	220.98	-40.82017	22	180.15980
.00	213.36	-31.73022	23	181.62980
10.00	213.36	-31.82226	24	181.53770
.00	205.74	-23.33106	25	182.40890
10.00	205.74	-23.36761	26	182.37240
.00	198.12	-15.26250	27	182.85750
10.00	198.12	-15.26494	28	182.85510
.00	190.50	-7.62660	29	182.87340
10.00	190.50	-7.62761	30	182.87240
.00	182.88	.00000	31	182.88000
10.00	182.88	.00000	32	182.88000
.00	175.26	7.62000	33	182.88000
10.00	175.26	7.62000	34	182.88000
.00	167.64	15.24000	35	182.88000
10.00	167.64	15.24000	36	182.88000
.00	160.02	22.86000	37	182.88000
10.00	160.02	22.86000	38	182.88000
.00	152.40	30.48000	39	182.88000
10.00	152.40	30.48000	40	182.88000
.00	144.78	38.10000	41	182.88000
10.00	144.78	38.10000	42	182.88000
.00	137.16	45.72000	43	182.88000
10.00	137.16	45.72000	44	182.88000
.00	129.54	53.34000	45	182.88000
10.00	129.54	53.34000	46	182.88000
.00	121.92	60.96000	47	182.88000
10.00	121.92	60.96000	48	182.88000
.00	114.30	68.58000	49	182.88000
10.00	114.30	68.58000	50	182.88000
.00	106.68	76.20000	51	182.88000
10.00	106.68	76.20000	52	182.88000
.00	99.06	83.82000	53	182.88000
10.00	99.06	83.82000	54	182.88000
.00	91.44	91.44001	55	182.88000
10.00	91.44	91.44001	56	182.88000

.00	83.82	99.06001	57	182.88000
10.00	83.82	99.06001	58	182.88000
.00	76.20	106.68000	59	182.88000
10.00	76.20	106.68000	60	182.88000
.00	68.58	114.30000	61	182.88000
10.00	68.58	114.30000	62	182.88000
.00	60.96	121.92000	63	182.88000
10.00	60.96	121.92000	64	182.88000
.00	53.34	129.54000	65	182.88000
10.00	53.34	129.54000	66	182.88000
.00	45.72	137.16000	67	182.88000
10.00	45.72	137.16000	68	182.88000
.00	38.10	144.78000	69	182.88000
10.00	38.10	144.78000	70	182.88000
.00	30.48	152.40000	71	182.88000
10.00	30.48	152.40000	72	182.88000
.00	22.86	160.02000	73	182.88000
10.00	22.86	160.02000	74	182.88000
.00	15.24	167.64000	75	182.88000
10.00	15.24	167.64000	76	182.88000
.00	7.62	175.26000	77	182.88000
10.00	7.62	175.26000	78	182.88000
.00	.00	182.88000	79	182.88000
10.00	.00	182.88000	80	182.88000

TIME STEP NO. = 1517
TOTAL TIME = .31960E+08
TIME INTERVAL = .17600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.31702E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-4426.50600	3	-4183.93700
10.00	242.57	-3703.50500	4	-3460.93500
.00	241.30	-2602.22800	5	-2360.92800
10.00	241.30	-2103.96700	6	-1862.66700
.00	240.03	-1909.83800	7	-1669.80800
10.00	240.03	-1581.58200	8	-1341.55200
.00	238.76	-1545.28600	9	-1306.52600
10.00	238.76	-1321.70800	10	-1082.94800
.00	236.22	-1194.00000	11	-957.78040
10.00	236.22	-1048.97100	12	-812.75090
.00	233.68	-994.45030	13	-760.77030
10.00	233.68	-897.82200	14	-664.14200
.00	231.14	-864.56430	15	-633.42420
10.00	231.14	-798.97390	16	-567.83390
.00	228.60	-772.46990	17	-543.86990
10.00	228.60	-727.80370	18	-499.20370
.00	224.79	-677.12800	19	-452.33810
10.00	224.79	-649.45690	20	-424.66690
.00	220.98	-608.60630	21	-387.62630
10.00	220.98	-592.20480	22	-371.22480
.00	213.36	-519.58120	23	-306.22120
10.00	213.36	-510.50250	24	-297.14250
.00	205.74	-459.09590	25	-253.35590
10.00	205.74	-454.46960	26	-248.72960
.00	198.12	-414.51870	27	-216.39870
10.00	198.12	-412.74180	28	-214.62190
.00	190.50	-398.23380	29	-207.73380
10.00	190.50	-397.26100	30	-206.76100
.00	182.88	-383.55980	31	-200.67980
10.00	182.88	-383.09260	32	-200.21260
.00	175.26	-372.77570	33	-197.51570
10.00	175.26	-372.52010	34	-197.26010
.00	167.64	-362.47410	35	-194.83410
10.00	167.64	-362.36060	36	-194.72060
.00	160.02	-352.59020	37	-192.57020
10.00	160.02	-352.58640	38	-192.56640
.00	152.40	-343.06940	39	-190.66940
10.00	152.40	-343.16980	40	-190.76980
.00	144.78	-333.86330	41	-189.08330
10.00	144.78	-334.08610	42	-189.30610
.00	137.16	-324.92600	43	-187.76590
10.00	137.16	-325.31550	44	-188.15550
.00	129.54	-225.66280	45	-96.12285
10.00	129.54	-221.29890	46	-91.75891
.00	121.92	-175.89590	47	-53.97593
10.00	121.92	-173.00790	48	-51.08790
.00	114.30	-144.81980	49	-30.51984
10.00	114.30	-143.23720	50	-28.93724
.00	106.68	-122.71640	51	-16.03636
10.00	106.68	-121.94030	52	-15.26030
.00	99.06	-105.59150	53	-6.53152
10.00	99.06	-105.29360	54	-6.23359
.00	91.44	-91.50382	55	-.06380
10.00	91.44	-91.50173	56	-.06171

.00	83.82	-83.86510	57	-.04510
10.00	83.82	-83.86416	58	-.04416
.00	76.20	-76.23114	59	-.03114
10.00	76.20	-76.23079	60	-.03079
.00	68.58	-68.60095	61	-.02095
10.00	68.58	-68.60087	62	-.02087
.00	60.96	-60.97366	63	-.01366
10.00	60.96	-60.97371	64	-.01371
.00	53.34	-53.34859	65	-.00859
10.00	53.34	-53.34867	66	-.00867
.00	45.72	-45.72518	67	-.00518
10.00	45.72	-45.72526	68	-.00526
.00	38.10	-38.10297	69	-.00297
10.00	38.10	-38.10303	70	-.00303
.00	30.48	-30.48159	71	-.00159
10.00	30.48	-30.48165	72	-.00165
.00	22.86	-22.86079	73	-.00079
10.00	22.86	-22.86082	74	-.00082
.00	15.24	-15.24033	75	-.00033
10.00	15.24	-15.24035	76	-.00035
.00	7.62	-7.62010	77	-.00010
10.00	7.62	-7.62011	78	-.00011
.00	.00	.00000	79	.00000
10.00	.00	.00000	80	.00000

TIME STEP NO. = 1517
TOTAL TIME = .31960E+08
TIME INTERVAL = .17600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.20378E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-3764.72600	3	-3522.15600
10.00	242.57	-3136.65200	4	-2894.08200
.00	241.30	-2107.38400	5	-1866.08400
10.00	241.30	-1684.32800	6	-1443.02800
.00	240.03	-1514.71700	7	-1274.68700
10.00	240.03	-1240.85000	8	-1000.82000
.00	238.76	-1211.51300	9	-972.75270
10.00	238.76	-1027.54900	10	-788.78910
.00	236.22	-926.25580	11	-690.03580
10.00	236.22	-808.71990	12	-572.49990
.00	233.68	-766.09040	13	-532.41050
10.00	233.68	-688.70510	14	-455.02510
.00	231.14	-662.52270	15	-431.38270
10.00	231.14	-610.54330	16	-379.40330
.00	228.60	-589.35760	17	-360.75750
10.00	228.60	-554.32640	18	-325.72640
.00	224.79	-513.78760	19	-288.99770
10.00	224.79	-492.40940	20	-267.61940
.00	220.98	-459.45770	21	-238.47770
10.00	220.98	-447.02130	22	-226.04130
.00	213.36	-388.64670	23	-175.28670
10.00	213.36	-381.95090	24	-168.59090
.00	205.74	-340.12590	25	-134.38590
10.00	205.74	-336.82860	26	-131.08860
.00	198.12	-303.99420	27	-105.87420
10.00	198.12	-302.81720	28	-104.69720
.00	190.50	-290.64210	29	-100.14210
10.00	190.50	-290.01160	30	-99.51163
.00	182.88	-278.22800	31	-95.34803
10.00	182.88	-277.92990	32	-95.04990
.00	175.26	-267.65870	33	-92.39873
10.00	175.26	-267.55740	34	-92.29739
.00	167.64	-257.41820	35	-89.77819
10.00	167.64	-257.47110	36	-89.83107
.00	160.02	-247.45700	37	-87.43700
10.00	160.02	-247.65980	38	-87.63985
.00	152.40	-237.73150	39	-85.33147
10.00	152.40	-238.11320	40	-85.71325
.00	144.78	-228.19940	41	-83.41939
10.00	144.78	-228.82510	42	-84.04516
.00	137.16	-218.81590	43	-81.65591
10.00	137.16	-219.79730	44	-82.63729
.00	129.54	-127.38360	45	2.15637
10.00	129.54	-123.41010	46	6.12985
.00	121.92	-89.12250	47	32.79750
10.00	121.92	-86.93240	48	34.98761
.00	114.30	-67.15879	49	47.14121
10.00	114.30	-66.17438	50	48.12562
.00	106.68	-52.03394	51	54.64606
10.00	106.68	-51.65110	52	55.02891
.00	99.06	-40.32222	53	58.73779
10.00	99.06	-40.21236	54	58.84765
.00	91.44	-30.48710	55	60.95291
10.00	91.44	-30.48681	56	60.95320

.00	83.82	-22.86347	57	60.95653
10.00	83.82	-22.86340	58	60.95660
.00	76.20	-15.24147	59	60.95853
10.00	76.20	-15.24147	60	60.95853
.00	68.58	-7.62043	61	60.95957
10.00	68.58	-7.62045	62	60.95955
.00	60.96	.00000	63	60.96000
10.00	60.96	.00000	64	60.96000
.00	53.34	7.62000	65	60.96000
10.00	53.34	7.62000	66	60.96000
.00	45.72	15.24000	67	60.96000
10.00	45.72	15.24000	68	60.96000
.00	38.10	22.86000	69	60.96000
10.00	38.10	22.86000	70	60.96000
.00	30.48	30.48000	71	60.96000
10.00	30.48	30.48000	72	60.96000
.00	22.86	38.10000	73	60.96000
10.00	22.86	38.10000	74	60.96000
.00	15.24	45.72000	75	60.96000
10.00	15.24	45.72000	76	60.96000
.00	7.62	53.34000	77	60.96000
10.00	7.62	53.34000	78	60.96000
.00	.00	60.96000	79	60.96000
10.00	.00	60.96000	80	60.96000

TIME STEP NO. = 1553
TOTAL TIME = .31101E+08
TIME INTERVAL = .38833E+02
CUMULATIVE INFLOW INTO THE SYSTEM = -.85964E+02

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-14609.68000	1	-14365.84000
10.00	243.84	-14540.73000	2	-14296.89000
.00	242.57	-1897.09100	3	-1654.52100
10.00	242.57	-1579.61300	4	-1337.04300
.00	241.30	-872.08910	5	-630.78910
10.00	241.30	-677.44250	6	-436.14240
.00	240.03	-579.49790	7	-339.46790
10.00	240.03	-460.44090	8	-220.41080
.00	238.76	-444.47310	9	-205.71310
10.00	238.76	-368.16150	10	-129.40150
.00	236.22	-327.30070	11	-91.08073
10.00	236.22	-280.71100	12	-44.49103
.00	233.68	-263.98120	13	-30.30124
10.00	233.68	-234.42740	14	-.74744
.00	231.14	-223.86560	15	7.27438
10.00	231.14	-204.68500	16	26.45502
.00	228.60	-195.81390	17	32.78607
10.00	228.60	-183.34730	18	45.25269
.00	224.79	-166.96930	19	57.82073
10.00	224.79	-159.76430	20	65.02566
.00	220.98	-146.13400	21	74.84602
10.00	220.98	-142.25760	22	78.72235
.00	213.36	-118.51570	23	94.84427
10.00	213.36	-116.66220	24	96.69783
.00	205.74	-98.89371	25	106.84630
10.00	205.74	-98.13521	26	107.60480
.00	198.12	-83.61746	27	114.50250
10.00	198.12	-83.48123	28	114.63880
.00	190.50	-75.34733	29	115.15270
10.00	190.50	-75.26781	30	115.23220
.00	182.88	-67.26855	31	115.61140
10.00	182.88	-67.21115	32	115.66890
.00	175.26	-58.71728	33	116.54270
10.00	175.26	-58.70578	34	116.55420
.00	167.64	-50.39046	35	117.24950
10.00	167.64	-50.40751	36	117.23250
.00	160.02	-42.24238	37	117.77760
10.00	160.02	-42.28035	38	117.73970
.00	152.40	-34.23558	39	118.16440
10.00	152.40	-34.29283	40	118.10720
.00	144.78	-26.33912	41	118.44090
10.00	144.78	-26.41790	42	118.36210
.00	137.16	-18.52731	43	118.63270
10.00	137.16	-18.63267	44	118.52730
.00	129.54	-7.90470	45	121.63530
10.00	129.54	-7.96459	46	121.57540
.00	121.92	.00000	47	121.92000
10.00	121.92	.00000	48	121.92000
.00	114.30	7.62000	49	121.92000
10.00	114.30	7.62000	50	121.92000
.00	106.68	15.24000	51	121.92000
10.00	106.68	15.24000	52	121.92000
.00	99.06	22.86000	53	121.92000
10.00	99.06	22.86000	54	121.92000
.00	91.44	30.48000	55	121.92000
10.00	91.44	30.48000	56	121.92000

.00	83.82	38.10000	57	121.92000
10.00	83.82	38.10000	58	121.92000
.00	76.20	45.72000	59	121.92000
10.00	76.20	45.72000	60	121.92000
.00	68.58	53.34000	61	121.92000
10.00	68.58	53.34000	62	121.92000
.00	60.96	60.96000	63	121.92000
10.00	60.96	60.96000	64	121.92000
.00	53.34	68.58000	65	121.92000
10.00	53.34	68.58000	66	121.92000
.00	45.72	76.20000	67	121.92000
10.00	45.72	76.20000	68	121.92000
.00	38.10	83.82000	69	121.92000
10.00	38.10	83.82000	70	121.92000
.00	30.48	91.44001	71	121.92000
10.00	30.48	91.44001	72	121.92000
.00	22.86	99.06002	73	121.92000
10.00	22.86	99.06002	74	121.92000
.00	15.24	106.68000	75	121.92000
10.00	15.24	106.68000	76	121.92000
.00	7.62	114.30000	77	121.92000
10.00	7.62	114.30000	78	121.92000
.00	.00	121.92000	79	121.92000
10.00	.00	121.92000	80	121.92000

TIME STEP NO. = 1554
TOTAL TIME = .31960E+08
TIME INTERVAL = .20268E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.10211E+04

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-74.25706	1	169.58290
10.00	243.84	-74.76128	2	169.07870
.00	242.57	-71.92726	3	170.64270
10.00	242.57	-72.39894	4	170.17110
.00	241.30	-69.67561	5	171.62440
10.00	241.30	-70.12065	6	171.17930
.00	240.03	-67.49562	7	172.53440
10.00	240.03	-67.91916	8	172.11080
.00	238.76	-65.38144	9	173.37860
10.00	238.76	-65.78798	10	172.97200
.00	236.22	-61.35225	11	174.86770
10.00	236.22	-61.69877	12	174.52120
.00	233.68	-57.52636	13	176.15360
10.00	233.68	-57.83073	14	175.84930
.00	231.14	-53.87507	15	177.26490
10.00	231.14	-54.15102	16	176.98900
.00	228.60	-50.37437	17	178.22560
10.00	228.60	-50.63260	18	177.96740
.00	224.79	-45.38180	19	179.40820
10.00	224.79	-45.59972	20	179.19030
.00	220.98	-40.62393	21	180.35610
10.00	220.98	-40.82019	22	180.15980
.00	213.36	-31.73022	23	181.62980
10.00	213.36	-31.82228	24	181.53770
.00	205.74	-23.33106	25	182.40900
10.00	205.74	-23.36762	26	182.37240
.00	198.12	-15.26250	27	182.85750
10.00	198.12	-15.26494	28	182.85510
.00	190.50	-7.62661	29	182.87340
10.00	190.50	-7.62761	30	182.87240
.00	182.88	.00000	31	182.88000
10.00	182.88	.00000	32	182.88000
.00	175.26	7.62000	33	182.88000
10.00	175.26	7.62000	34	182.88000
.00	167.64	15.24000	35	182.88000
10.00	167.64	15.24000	36	182.88000
.00	160.02	22.86000	37	182.88000
10.00	160.02	22.86000	38	182.88000
.00	152.40	30.48000	39	182.88000
10.00	152.40	30.48000	40	182.88000
.00	144.78	38.10000	41	182.88000
10.00	144.78	38.10000	42	182.88000
.00	137.16	45.72000	43	182.88000
10.00	137.16	45.72000	44	182.88000
.00	129.54	53.34000	45	182.88000
10.00	129.54	53.34000	46	182.88000
.00	121.92	60.96000	47	182.88000
10.00	121.92	60.96000	48	182.88000
.00	114.30	68.58000	49	182.88000
10.00	114.30	68.58000	50	182.88000
.00	106.68	76.20000	51	182.88000
10.00	106.68	76.20000	52	182.88000
.00	99.06	83.82000	53	182.88000
10.00	99.06	83.82000	54	182.88000
.00	91.44	91.44001	55	182.88000
10.00	91.44	91.44001	56	182.88000

.00	83.82	99.06002	57	182.88000
10.00	83.82	99.06002	58	182.88000
.00	76.20	106.68000	59	182.88000
10.00	76.20	106.68000	60	182.88000
.00	68.58	114.30000	61	182.88000
10.00	68.58	114.30000	62	182.88000
.00	60.96	121.92000	63	182.88000
10.00	60.96	121.92000	64	182.88000
.00	53.34	129.54000	65	182.88000
10.00	53.34	129.54000	66	182.88000
.00	45.72	137.16000	67	182.88000
10.00	45.72	137.16000	68	182.88000
.00	38.10	144.78000	69	182.88000
10.00	38.10	144.78000	70	182.88000
.00	30.48	152.40000	71	182.88000
10.00	30.48	152.40000	72	182.88000
.00	22.86	160.02000	73	182.88000
10.00	22.86	160.02000	74	182.88000
.00	15.24	167.64000	75	182.88000
10.00	15.24	167.64000	76	182.88000
.00	7.62	175.26000	77	182.88000
10.00	7.62	175.26000	78	182.88000
.00	.00	182.88000	79	182.88000
10.00	.00	182.88000	80	182.88000

TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.99624E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-186.60610	1	57.23392
10.00	243.84	-193.92910	2	49.91092
.00	242.57	-173.32910	3	69.24089
10.00	242.57	-179.31980	4	63.25026
.00	241.30	-162.20200	5	79.09805
10.00	241.30	-167.26550	6	74.03449
.00	240.03	-152.67530	7	87.35465
10.00	240.03	-157.07530	8	82.95469
.00	238.76	-144.37810	9	94.38189
10.00	238.76	-148.29380	10	90.46624
.00	236.22	-130.81160	11	105.40840
10.00	236.22	-133.60000	12	102.62000
.00	233.68	-119.70480	13	113.97520
10.00	233.68	-121.82840	14	111.85160
.00	231.14	-110.33210	15	120.80790
10.00	231.14	-112.05510	16	119.08490
.00	228.60	-102.23400	17	126.36600
10.00	228.60	-103.71730	18	124.88270
.00	224.79	-91.96142	19	132.82860
10.00	224.79	-93.07386	20	131.71610
.00	220.98	-83.16652	21	137.81350
10.00	220.98	-84.09660	22	136.88340
.00	213.36	-68.92033	23	144.43970
10.00	213.36	-69.28759	24	144.07240
.00	205.74	-57.05703	25	148.68300
10.00	205.74	-57.18831	26	148.55170
.00	198.12	-46.70540	27	151.41460
10.00	198.12	-46.71974	28	151.40030
.00	190.50	-38.92673	29	151.57330
10.00	190.50	-38.93574	30	151.56430
.00	182.88	-31.20810	31	151.67190
10.00	182.88	-31.21412	32	151.66590
.00	175.26	-23.24809	33	152.01190
10.00	175.26	-23.25864	34	152.00140
.00	167.64	-15.40671	35	152.23330
10.00	167.64	-15.41791	36	152.22210
.00	160.02	-7.65607	37	152.36390
10.00	160.02	-7.66502	38	152.35500
.00	152.40	.00000	39	152.40000
10.00	152.40	.00000	40	152.40000
.00	144.78	7.62000	41	152.40000
10.00	144.78	7.62000	42	152.40000
.00	137.16	15.24000	43	152.40000
10.00	137.16	15.24000	44	152.40000
.00	129.54	22.86000	45	152.40000
10.00	129.54	22.86000	46	152.40000
.00	121.92	30.48000	47	152.40000
10.00	121.92	30.48000	48	152.40000
.00	114.30	38.10000	49	152.40000
10.00	114.30	38.10000	50	152.40000
.00	106.68	45.72000	51	152.40000
10.00	106.68	45.72000	52	152.40000
.00	99.06	53.34000	53	152.40000
10.00	99.06	53.34000	54	152.40000
.00	91.44	60.96000	55	152.40000
10.00	91.44	60.96000	56	152.40000

.00	83.82	68.58000	57	152.40000
10.00	83.82	68.58000	58	152.40000
.00	76.20	76.20000	59	152.40000
10.00	76.20	76.20000	60	152.40000
.00	68.58	83.82000	61	152.40000
10.00	68.58	83.82000	62	152.40000
.00	60.96	91.44001	63	152.40000
10.00	60.96	91.44001	64	152.40000
.00	53.34	99.06001	65	152.40000
10.00	53.34	99.06001	66	152.40000
.00	45.72	106.68000	67	152.40000
10.00	45.72	106.68000	68	152.40000
.00	38.10	114.30000	69	152.40000
10.00	38.10	114.30000	70	152.40000
.00	30.48	121.92000	71	152.40000
10.00	30.48	121.92000	72	152.40000
.00	22.86	129.54000	73	152.40000
10.00	22.86	129.54000	74	152.40000
.00	15.24	137.16000	75	152.40000
10.00	15.24	137.16000	76	152.40000
.00	7.62	144.78000	77	152.40000
10.00	7.62	144.78000	78	152.40000
.00	.00	152.40000	79	152.40000
10.00	.00	152.40000	80	152.40000

TIME STEP NO. = 1517
TOTAL TIME = .31960E+08
TIME INTERVAL = .17600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.10238E+04

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-186.60600	1	57.23404
10.00	243.84	-193.92870	2	49.91127
.00	242.57	-173.32900	3	69.24101
10.00	242.57	-179.31940	4	63.25059
.00	241.30	-162.20180	5	79.09819
10.00	241.30	-167.26520	6	74.03478
.00	240.03	-152.67520	7	87.35476
10.00	240.03	-157.07510	8	82.95493
.00	238.76	-144.37800	9	94.38197
10.00	238.76	-148.29360	10	90.46642
.00	236.22	-130.81160	11	105.40840
10.00	236.22	-133.59990	12	102.62010
.00	233.68	-119.70480	13	113.97520
10.00	233.68	-121.82830	14	111.85170
.00	231.14	-110.33200	15	120.80800
10.00	231.14	-112.05500	16	119.08500
.00	228.60	-102.23400	17	126.36600
10.00	228.60	-103.71720	18	124.88280
.00	224.79	-91.96138	19	132.82860
10.00	224.79	-93.07376	20	131.71620
.00	220.98	-83.16646	21	137.81350
10.00	220.98	-84.09653	22	136.88350
.00	213.36	-68.92027	23	144.43970
10.00	213.36	-69.28754	24	144.07250
.00	205.74	-57.05698	25	148.68300
10.00	205.74	-57.18824	26	148.55180
.00	198.12	-46.70534	27	151.41470
10.00	198.12	-46.71967	28	151.40030
.00	190.50	-38.92667	29	151.57330
10.00	190.50	-38.93567	30	151.56430
.00	182.88	-31.20805	31	151.67190
10.00	182.88	-31.21406	32	151.66590
.00	175.26	-23.24806	33	152.01190
10.00	175.26	-23.25861	34	152.00140
.00	167.64	-15.40670	35	152.23330
10.00	167.64	-15.41790	36	152.22210
.00	160.02	-7.65606	37	152.36390
10.00	160.02	-7.66502	38	152.35500
.00	152.40	.00000	39	152.40000
10.00	152.40	.00000	40	152.40000
.00	144.78	7.62000	41	152.40000
10.00	144.78	7.62000	42	152.40000
.00	137.16	15.24000	43	152.40000
10.00	137.16	15.24000	44	152.40000
.00	129.54	22.86000	45	152.40000
10.00	129.54	22.86000	46	152.40000
.00	121.92	30.48000	47	152.40000
10.00	121.92	30.48000	48	152.40000
.00	114.30	38.10000	49	152.40000
10.00	114.30	38.10000	50	152.40000
.00	106.68	45.72000	51	152.40000
10.00	106.68	45.72000	52	152.40000
.00	99.06	53.34000	53	152.40000
10.00	99.06	53.34000	54	152.40000
.00	91.44	60.96000	55	152.40000
10.00	91.44	60.96000	56	152.40000

.00	83.82	68.58000	57	152.40000
10.00	83.82	68.58000	58	152.40000
.00	76.20	76.20000	59	152.40000
10.00	76.20	76.20000	60	152.40000
.00	68.58	83.82000	61	152.40000
10.00	68.58	83.82000	62	152.40000
.00	60.96	91.44001	63	152.40000
10.00	60.96	91.44001	64	152.40000
.00	53.34	99.06002	65	152.40000
10.00	53.34	99.06002	66	152.40000
.00	45.72	106.68000	67	152.40000
10.00	45.72	106.68000	68	152.40000
.00	38.10	114.30000	69	152.40000
10.00	38.10	114.30000	70	152.40000
.00	30.48	121.92000	71	152.40000
10.00	30.48	121.92000	72	152.40000
.00	22.86	129.54000	73	152.40000
10.00	22.86	129.54000	74	152.40000
.00	15.24	137.16000	75	152.40000
10.00	15.24	137.16000	76	152.40000
.00	7.62	144.78000	77	152.40000
10.00	7.62	144.78000	78	152.40000
.00	.00	152.40000	79	152.40000
10.00	.00	152.40000	80	152.40000

TIME STEP NO. = 1477
TOTAL TIME = .31100E+08
TIME INTERVAL = .20260E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.21533E+04

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-106.75870	1	137.08130
10.00	243.84	-110.02930	2	133.81070
.00	242.57	-99.92377	3	142.64620
10.00	242.57	-102.70890	4	139.86110
.00	241.30	-93.94314	5	147.35690
10.00	241.30	-96.37143	6	144.92860
.00	240.03	-88.63541	7	151.39460
10.00	240.03	-90.79749	8	149.23250
.00	238.76	-83.86864	9	154.89140
10.00	238.76	-85.83040	10	152.92960
.00	236.22	-75.73667	11	160.48330
10.00	236.22	-77.19378	12	159.02620
.00	233.68	-68.80059	13	164.87940
10.00	233.68	-69.94632	14	163.73370
.00	231.14	-62.74225	15	168.39770
10.00	231.14	-63.69401	16	167.44600
.00	228.60	-57.34858	17	171.25140
10.00	228.60	-58.18131	18	170.41870
.00	224.79	-50.26331	19	174.52670
10.00	224.79	-50.90142	20	173.88860
.00	220.98	-43.98363	21	176.99640
10.00	220.98	-44.52163	22	176.45840
.00	213.36	-33.28745	23	180.07260
10.00	213.36	-33.50993	24	179.85010
.00	205.74	-23.89160	25	181.84840
10.00	205.74	-23.97267	26	181.76730
.00	198.12	-15.28883	27	182.83120
10.00	198.12	-15.29370	28	182.82630
.00	190.50	-7.63432	29	182.86570
10.00	190.50	-7.63638	30	182.86360
.00	182.88	.00000	31	182.88000
10.00	182.88	.00000	32	182.88000
.00	175.26	7.62000	33	182.88000
10.00	175.26	7.62000	34	182.88000
.00	167.64	15.24000	35	182.88000
10.00	167.64	15.24000	36	182.88000
.00	160.02	22.86000	37	182.88000
10.00	160.02	22.86000	38	182.88000
.00	152.40	30.48000	39	182.88000
10.00	152.40	30.48000	40	182.88000
.00	144.78	38.10000	41	182.88000
10.00	144.78	38.10000	42	182.88000
.00	137.16	45.72000	43	182.88000
10.00	137.16	45.72000	44	182.88000
.00	129.54	53.34000	45	182.88000
10.00	129.54	53.34000	46	182.88000
.00	121.92	60.96000	47	182.88000
10.00	121.92	60.96000	48	182.88000
.00	114.30	68.58000	49	182.88000
10.00	114.30	68.58000	50	182.88000
.00	106.68	76.20000	51	182.88000
10.00	106.68	76.20000	52	182.88000
.00	99.06	83.82000	53	182.88000
10.00	99.06	83.82000	54	182.88000
.00	91.44	91.44001	55	182.88000
10.00	91.44	91.44001	56	182.88000

.00	83.82	99.06001	57	182.88000
10.00	83.82	99.06001	58	182.88000
.00	76.20	106.68000	59	182.88000
10.00	76.20	106.68000	60	182.88000
.00	68.58	114.30000	61	182.88000
10.00	68.58	114.30000	62	182.88000
.00	60.96	121.92000	63	182.88000
10.00	60.96	121.92000	64	182.88000
.00	53.34	129.54000	65	182.88000
10.00	53.34	129.54000	66	182.88000
.00	45.72	137.16000	67	182.88000
10.00	45.72	137.16000	68	182.88000
.00	38.10	144.78000	69	182.88000
10.00	38.10	144.78000	70	182.88000
.00	30.48	152.40000	71	182.88000
10.00	30.48	152.40000	72	182.88000
.00	22.86	160.02000	73	182.88000
10.00	22.86	160.02000	74	182.88000
.00	15.24	167.64000	75	182.88000
10.00	15.24	167.64000	76	182.88000
.00	7.62	175.26000	77	182.88000
10.00	7.62	175.26000	78	182.88000
.00	.00	182.88000	79	182.88000
10.00	.00	182.88000	80	182.88000

TIME STEP NO. = 1478
TOTAL TIME = .31100E+08
TIME INTERVAL = .16286E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.14616E+04

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1489.04300	3	-1246.47300
10.00	242.57	-1244.89800	4	-1002.32800
.00	241.30	-637.41350	5	-396.11350
10.00	241.30	-493.15960	6	-251.85960
.00	240.03	-412.04540	7	-172.01540
10.00	240.03	-325.48720	8	-85.45725
.00	238.76	-311.30090	9	-72.54094
10.00	238.76	-256.79260	10	-18.03261
.00	236.22	-225.81340	11	10.40665
10.00	236.22	-193.08820	12	43.13178
.00	233.68	-180.02710	13	53.65291
10.00	233.68	-159.59910	14	74.08090
.00	231.14	-151.10140	15	80.03859
10.00	231.14	-138.06910	16	93.07086
.00	228.60	-130.85880	17	97.74123
10.00	228.60	-122.56280	18	106.03720
.00	224.79	-109.95500	19	114.83500
10.00	224.79	-105.31270	20	119.47730
.00	220.98	-94.72849	21	126.25150
10.00	220.98	-92.36402	22	128.61600
.00	213.36	-74.19939	23	139.16060
10.00	213.36	-73.14174	24	140.21830
.00	205.74	-59.21829	25	146.52170
10.00	205.74	-58.82808	26	146.91190
.00	198.12	-47.20202	27	150.91800
10.00	198.12	-47.16026	28	150.95970
.00	190.50	-39.33316	29	151.16680
10.00	190.50	-39.30945	30	151.19060
.00	182.88	-31.56188	31	151.31810
10.00	182.88	-31.54299	32	151.33700
.00	175.26	-23.43361	33	151.82640
10.00	175.26	-23.43659	34	151.82340
.00	167.64	-15.48547	35	152.15450
10.00	167.64	-15.49702	36	152.14300
.00	160.02	-7.67296	37	152.34700
10.00	160.02	-7.68495	38	152.33500
.00	152.40	.00000	39	152.40000
10.00	152.40	.00000	40	152.40000
.00	144.78	7.62000	41	152.40000
10.00	144.78	7.62000	42	152.40000
.00	137.16	15.24000	43	152.40000
10.00	137.16	15.24000	44	152.40000
.00	129.54	22.86000	45	152.40000
10.00	129.54	22.86000	46	152.40000
.00	121.92	30.48000	47	152.40000
10.00	121.92	30.48000	48	152.40000
.00	114.30	38.10000	49	152.40000
10.00	114.30	38.10000	50	152.40000
.00	106.68	45.72000	51	152.40000
10.00	106.68	45.72000	52	152.40000
.00	99.06	53.34000	53	152.40000
10.00	99.06	53.34000	54	152.40000
.00	91.44	60.96000	55	152.40000
10.00	91.44	60.96000	56	152.40000

.00	83.82	68.58000	57	152.40000
10.00	83.82	68.58000	58	152.40000
.00	76.20	76.20000	59	152.40000
10.00	76.20	76.20000	60	152.40000
.00	68.58	83.82000	61	152.40000
10.00	68.58	83.82000	62	152.40000
.00	60.96	91.44001	63	152.40000
10.00	60.96	91.44001	64	152.40000
.00	53.34	99.06001	65	152.40000
10.00	53.34	99.06001	66	152.40000
.00	45.72	106.68000	67	152.40000
10.00	45.72	106.68000	68	152.40000
.00	38.10	114.30000	69	152.40000
10.00	38.10	114.30000	70	152.40000
.00	30.48	121.92000	71	152.40000
10.00	30.48	121.92000	72	152.40000
.00	22.86	129.54000	73	152.40000
10.00	22.86	129.54000	74	152.40000
.00	15.24	137.16000	75	152.40000
10.00	15.24	137.16000	76	152.40000
.00	7.62	144.78000	77	152.40000
10.00	7.62	144.78000	78	152.40000
.00	.00	152.40000	79	152.40000
10.00	.00	152.40000	80	152.40000

TIME STEP NO. = 1478
TOTAL TIME = .31100E+08
TIME INTERVAL = .16286E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.86130E+02

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1898.67000	3	-1656.10000
10.00	242.57	-1581.52600	4	-1338.95600
.00	241.30	-872.15340	5	-630.85340
10.00	241.30	-677.49280	6	-436.19280
.00	240.03	-579.51710	7	-339.48710
10.00	240.03	-460.45180	8	-220.42180
.00	238.76	-444.48320	9	-205.72330
10.00	238.76	-368.16630	10	-129.40630
.00	236.22	-327.30580	11	-91.08579
10.00	236.22	-280.71370	12	-44.49365
.00	233.68	-263.98430	13	-30.30435
10.00	233.68	-234.42890	14	-.74889
.00	231.14	-223.86730	15	7.27274
10.00	231.14	-204.68580	16	26.45419
.00	228.60	-195.81490	17	32.78512
10.00	228.60	-183.34800	18	45.25200
.00	224.79	-166.96980	19	57.82016
10.00	224.79	-159.76470	20	65.02533
.00	220.98	-146.13440	21	74.84564
10.00	220.98	-142.25800	22	78.72197
.00	213.36	-118.51590	23	94.84409
10.00	213.36	-116.66240	24	96.69760
.00	205.74	-98.89386	25	106.84620
10.00	205.74	-98.13525	26	107.60480
.00	198.12	-83.61753	27	114.50250
10.00	198.12	-83.48132	28	114.63870
.00	190.50	-75.34733	29	115.15270
10.00	190.50	-75.26785	30	115.23210
.00	182.88	-67.26850	31	115.61150
10.00	182.88	-67.21107	32	115.66890
.00	175.26	-58.71728	33	116.54270
10.00	175.26	-58.70577	34	116.55420
.00	167.64	-50.39049	35	117.24950
10.00	167.64	-50.40750	36	117.23250
.00	160.02	-42.24240	37	117.77760
10.00	160.02	-42.28034	38	117.73970
.00	152.40	-34.23560	39	118.16440
10.00	152.40	-34.29282	40	118.10720
.00	144.78	-26.33913	41	118.44090
10.00	144.78	-26.41792	42	118.36210
.00	137.16	-18.52732	43	118.63270
10.00	137.16	-18.63270	44	118.52730
.00	129.54	-7.90470	45	121.63530
10.00	129.54	-7.96459	46	121.57540
.00	121.92	.00000	47	121.92000
10.00	121.92	.00000	48	121.92000
.00	114.30	7.62000	49	121.92000
10.00	114.30	7.62000	50	121.92000
.00	106.68	15.24000	51	121.92000
10.00	106.68	15.24000	52	121.92000
.00	99.06	22.86000	53	121.92000
10.00	99.06	22.86000	54	121.92000
.00	91.44	30.48000	55	121.92000
10.00	91.44	30.48000	56	121.92000

.00	83.82	38.10000	57	121.92000
10.00	83.82	38.10000	58	121.92000
.00	76.20	45.72000	59	121.92000
10.00	76.20	45.72000	60	121.92000
.00	68.58	53.34000	61	121.92000
10.00	68.58	53.34000	62	121.92000
.00	60.96	60.96000	63	121.92000
10.00	60.96	60.96000	64	121.92000
.00	53.34	68.58000	65	121.92000
10.00	53.34	68.58000	66	121.92000
.00	45.72	76.20000	67	121.92000
10.00	45.72	76.20000	68	121.92000
.00	38.10	83.82000	69	121.92000
10.00	38.10	83.82000	70	121.92000
.00	30.48	91.44001	71	121.92000
10.00	30.48	91.44001	72	121.92000
.00	22.86	99.06001	73	121.92000
10.00	22.86	99.06001	74	121.92000
.00	15.24	106.68000	75	121.92000
10.00	15.24	106.68000	76	121.92000
.00	7.62	114.30000	77	121.92000
10.00	7.62	114.30000	78	121.92000
.00	.00	121.92000	79	121.92000
10.00	.00	121.92000	80	121.92000

APPENDIX E2.5

OPPORTUNITY UNSAT2 MODEL RUN

OPPORTUNITY UNSAT2 MODEL

TREATMENT COMPARISONS

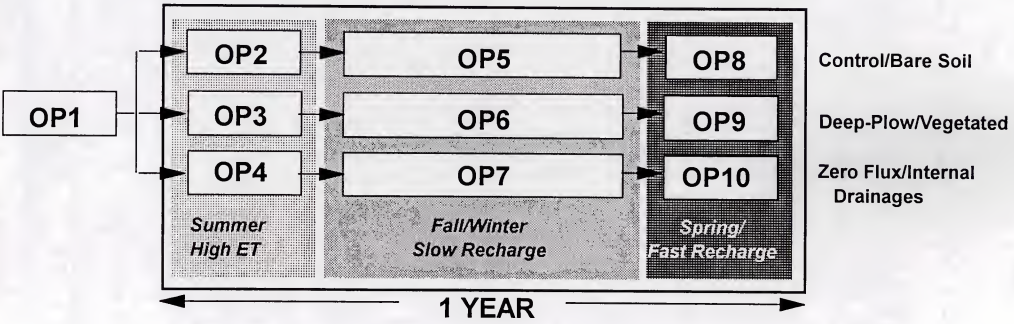

Table . **Domain description for Opportunity UNSAT2 model runs.**

Run Number	Treatment	Surface Flux Boundary Condition	Daily Potential Evap (-) or Infiltration (+)	Subsurface Boundary Conditions	Run Duration	Input Head Conditions
OP1	Preliminary Draindown	Zero Flux	Zero	Constant head=0 below 5.75'	90 days	-20 cm suction
OP2	Control/Net Evaporation	Bare soil	-3.22E-06 cm/s	Zero flux	90 days	OP1 output
OP3	Vegetated/Net Evaporation	Vegetated	-3.22E-06 cm/s	Zero flux	90 days	OP1 output
OP4	Zero Flux	Zero Flux	Zero	Zero flux	90 days	OP1 output
OP5	Control/Slow Recharge	Bare soil	+3.22E-07 cm/s	Zero flux	180 days	OP2 output
OP6	Vegetated/Net Evaporation	Vegetated	+3.22E-07 cm/s	Zero flux	180 days	OP3 output
OP7	Zero Flux	Zero Flux	Zero	Zero flux	180 days	OP4 output
OP8	Control/Fast Recharge	Bare soil	+1.28E-06 cm/s	Zero flux	90 days	OP5 output
OP9	Vegetated/Fast Recharge	Vegetated	+1.28E-06 cm/s	Zero flux	90 days	OP6 output
OP10	Zero Flux	Zero Flux	Zero	Zero flux	90 days	OP7 output

The UNSAT2 runs for the Opportunity site consist of the following:

Each run is saved on a separate subdirectory.
The subdirectory contains:

UNSAT.out	Detailed text output for model run
UNS1.DAT	Pass file for next sequential run
UNS10.DAT	Formatted output of domain at end of run
$$$.WQ!	Quattro file for plotting UNS10.dat

The runs are as follows

	Control	Deep Plow	Zero Flux
Day -90 - 0	OP1	OP1	OP1
Day 0-90	OP2	OP3	OP4
PET -25cm	Bare Soil	Veg	Draindown
Day 90-270	OP5	OP6	OP7
Perc -5cm	Low Flux	Low Flux	Draindown
Day 270-360	OP8	OP9	OP10
Perc -10cm	High Flux	High Flux	Draindown

OP1.DAT FILE

```
 OPPORTUNITY - EVAPORATION (DAY 1 OF PREPARATORY DRAIN) (OP1.dat)
  80    2   39    2    4    0   30    1    0    0
   0    0    0    0    0    2    1    2   20
 0.00E+00 -1.50E+04  1.00E-01
 5.00E+00  5.00E+00
   2   19
-1.50E+04  0.00E+00
 5.00E+00  5.00E+00
  39    3   40    4
 2.00E-02  2.00E-02  2.00E-02  2.00E-02  5.00E-02  5.00E-02  5.00E-02  5.00E-02
 1.80E-01  1.80E-01  1.80E-01  2.50E-01  2.50E-01  2.50E-01  2.50E-01  3.50E-01
 3.50E-01  3.50E-01  3.50E-01  3.50E-01
   3    3    2    2    2    2    1    1    1    1    1    1    1    1
   1    1
 1.00E+01  2.16E+04  2.00E+00  7.77E+06  1.00E+01  40
 1.00E+00  1.00E+00
 2.00E-04  2.00E-03  5.90E-01  0.00E+00  1.00E-02  1.85E+00 5.000E-02          1
 2.00E-04  2.00E-03  5.90E-01  0.00E+00  1.20E-01  1.50E+00 3.000E-02          1
 1.00E-04  1.00E-03  6.20E-01  0.00E+00  1.60E-01  1.33E+00 1.800E-02          1
 1.00E-01  1.00E+00  6.00E-01  0.00E+00  5.00E-02  2.50E+00 1.000E-01          1
   1   -4      0.0    243.84    -20.00
   2   -4     10.0    243.84    -20.00
   3    0      0.0    242.57    -20.00
   4    0     10.0    242.57    -20.00
   5    0      0.0    241.30    -20.00
   6    0     10.0    241.30    -20.00
   7    0      0.0    240.03    -20.00
   8    0     10.0    240.03    -20.00
   9    0      0.0    238.76    -20.00
  10    0     10.0    238.76    -20.00
  11    0      0.0    236.22    -20.00
  12    0     10.0    236.22    -20.00
  13    0      0.0    233.68    -20.00
  14    0     10.0    233.68    -20.00
  15    0      0.0    231.14    -20.00
  16    0     10.0    231.14    -20.00
```

17	0	0.0	228.60	-20.00
18	0	10.0	228.60	-20.00
19	0	0.0	224.79	-20.00
20	0	10.0	224.79	-20.00
21	0	0.0	220.98	-20.00
22	0	10.0	220.98	-20.00
23	0	0.0	213.36	-20.00
24	0	10.0	213.36	-20.00
25	0	0.0	205.74	-20.00
26	0	10.0	205.74	-20.00
27	0	0.0	198.12	-20.00
28	0	10.0	198.12	-20.00
29	0	0.0	190.50	-20.00
30	0	10.0	190.50	-20.00
31	0	0.0	182.88	-20.00
32	0	10.0	182.88	-20.00
33	0	0.0	175.26	-20.00
34	0	10.0	175.26	-20.00
35	0	0.0	167.64	-20.00
36	0	10.0	167.64	-20.00
37	0	0.0	160.02	-20.00
38	0	10.0	160.02	-20.00
39	0	0.0	152.40	-20.00
40	0	10.0	152.40	-20.00
41	0	0.0	144.78	-20.00
42	0	10.0	144.78	-20.00
43	0	0.0	137.16	-20.00
44	0	10.0	137.16	-20.00
45	0	0.0	129.54	-20.00
46	0	10.0	129.54	-20.00
47	0	0.0	121.92	-20.00
48	0	10.0	121.92	-20.00
49	0	0.0	114.30	-20.00
50	0	10.0	114.30	-20.00
51	0	0.0	106.68	-20.00
52	0	10.0	106.68	-20.00
53	0	0.0	99.06	-20.00
54	0	10.0	99.06	-20.00
55	0	0.0	91.44	-15.00
56	0	10.0	91.44	-15.00
57	0	0.0	83.82	-10.00
58	0	10.0	83.82	-10.00
59	0	0.0	76.20	-5.00
60	0	10.0	76.20	-5.00
61	1	0.0	68.58	0.00
62	1	10.0	68.58	0.00
63	1	0.0	60.96	0.00
64	1	10.0	60.96	0.00
65	1	0.0	53.34	0.00
66	1	10.0	53.34	0.00
67	1	0.0	45.72	0.00
68	1	10.0	45.72	0.00
69	1	0.0	38.10	0.00
70	1	10.0	38.10	0.00
71	1	0.0	30.48	0.00
72	1	10.0	30.48	0.00
73	1	0.0	22.86	0.00
74	1	10.0	22.86	0.00
75	1	0.0	15.24	0.00
76	1	10.0	15.24	0.00
77	1	0.0	7.62	0.00
78	1	10.0	7.62	0.00
79	1	0.0	0.00	0.00
80	1	10.0	0.00	0.00

1	1	3	4	2	1
2	3	5	6	4	1
3	5	7	8	6	1
4	7	9	10	8	1
5	9	11	12	10	1
6	11	13	14	12	1
7	13	15	16	14	1
8	15	17	18	16	1
9	17	19	20	18	1
10	19	21	22	20	1
11	21	23	24	22	1
12	23	25	26	24	2
13	25	27	28	26	2
14	27	29	30	28	2
15	29	31	32	30	2
16	31	33	34	32	2
17	33	35	36	34	2
18	35	37	38	36	3
19	37	39	40	38	3
20	39	41	42	40	3
21	41	43	44	42	3
22	43	45	46	44	3
23	45	47	48	46	3
24	47	49	50	48	3
25	49	51	52	50	3
26	51	53	54	52	3
27	53	55	56	54	3
28	55	57	58	56	3
29	57	59	60	58	3
30	59	61	62	60	3
31	61	63	64	62	3
32	63	65	66	64	4
33	65	67	68	66	4
34	67	69	70	68	4
35	69	71	72	70	4
36	71	73	74	72	4
37	73	75	76	74	4
38	75	77	78	76	4
39	77	79	80	78	4

END

```
RESTART OP2.DAT// OPPORTUNITY DAY 90 to 180: BARE SOIL EVAPORATION
    2     0
   20  2.16E+04  2.16E+04  2.00E+00 1.555E+07  1.00E+00  0.00E+00  0.00E+00   40
 -3.22E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   61     0  0.00E+00
   62     0  0.00E+00
   63     0  0.00E+00
   64     0  0.00E+00
   65     0  0.00E+00
   66     0  0.00E+00
   67     0  0.00E+00
   68     0  0.00E+00
   69     0  0.00E+00
   70     0  0.00E+00
   71     0  0.00E+00
   72     0  0.00E+00
   73     0  0.00E+00
   74     0  0.00E+00
   75     0  0.00E+00
   76     0  0.00E+00
   77     0  0.00E+00
   78     0  0.00E+00
   79     0  0.00E+00
   80     0  0.00E+00

END
```

```
RESTART OP3.DAT// OPPORTUNITY DAY 90 to 180: EVAPOTRANPIRATION
     2    0
    20  2.16E+04  2.16E+04  2.00E+00 1.555E+07  1.00E+00  0.00E+00  0.00E+00   40
 -3.22E-07 -1.50E+04  1.00E-01
     1 -2.90E-06
  5.00E-01  5.00E-01  5.00E-01  5.00E-01  5.00E-01  5.00E-01  5.00E-01  5.00E-01
  1.00E-00  1.00E-00  1.00E-00  1.00E-00  1.00E-00  1.00E-00  1.00E-00  1.00E-00
  1.00E-00  1.00E-00  1.00E-00  1.00E-00
    61     0  0.00E+00
    62     0  0.00E+00
    63     0  0.00E+00
    64     0  0.00E+00
    65     0  0.00E+00
    66     0  0.00E+00
    67     0  0.00E+00
    68     0  0.00E+00
    69     0  0.00E+00
    70     0  0.00E+00
    71     0  0.00E+00
    72     0  0.00E+00
    73     0  0.00E+00
    74     0  0.00E+00
    75     0  0.00E+00
    76     0  0.00E+00
    77     0  0.00E+00
    78     0  0.00E+00
    79     0  0.00E+00
    80     0  0.00E+00

END
```

```
RESTART OP4.DAT// OPPORTUNITY DAY 90 to 180: DRAINDOWN
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 1.555E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART OP5.DAT// OPPORTUNITY DAY 180 to 360: BARE SOIL EVAPORATION
    2    0
   20  1.00E+01  2.16E+04  1.30E+00 3.110E+07  1.00E+00  0.00E+00  0.00E+00   40
 3.215E-07 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART OP6.DAT// OPPORTUNITY DAY 180 to 360: EVAPOTRANSPIRATION
    2     0
   20  1.00E+01  2.16E+04  1.20E+00 3.110E+07  1.00E+00  0.00E+00  0.00E+00   40
 3.215E-07 -1.50E+04  1.00E-01
    0  0.00E+00
   61     0  0.00E+00
   62     0  0.00E+00
   63     0  0.00E+00
   64     0  0.00E+00
   65     0  0.00E+00
   66     0  0.00E+00
   67     0  0.00E+00
   68     0  0.00E+00
   69     0  0.00E+00
   70     0  0.00E+00
   71     0  0.00E+00
   72     0  0.00E+00
   73     0  0.00E+00
   74     0  0.00E+00
   75     0  0.00E+00
   76     0  0.00E+00
   77     0  0.00E+00
   78     0  0.00E+00
   79     0  0.00E+00
   80     0  0.00E+00

END
```

```
RESTART OP7.DAT// OPPORTUNITY DAY 180 to 360: DRAINDOWN
    2     0
   20  1.00E+01  2.16E+04  2.00E+00 3.110E+07  1.00E+00  0.00E+00  0.00E+00   40
 0.00E+00 -1.50E+04  1.00E-01
    0  0.00E+00
   61     0  0.00E+00
   62     0  0.00E+00
   63     0  0.00E+00
   64     0  0.00E+00
   65     0  0.00E+00
   66     0  0.00E+00
   67     0  0.00E+00
   68     0  0.00E+00
   69     0  0.00E+00
   70     0  0.00E+00
   71     0  0.00E+00
   72     0  0.00E+00
   73     0  0.00E+00
   74     0  0.00E+00
   75     0  0.00E+00
   76     0  0.00E+00
   77     0  0.00E+00
   78     0  0.00E+00
   79     0  0.00E+00
   80     0  0.00E+00

END
```

```
RESTART OP8.DAT// OPPORTUNITY DAY 360 to 450: BARE SOIL EVAPORATION
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
 1.286E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART OP9.DAT// OPPORTUNITY DAY 360 to 450: EVAPOTRANSPIRATION
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
 1.286E-06 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

```
RESTART OP10.DAT// OPPORTUNITY DAY 360 to 450: DRAINDOWN
    2    0
   20  2.16E+04  2.16E+04  2.00E+00 3.888E+07  1.00E+00  0.00E+00  0.00E+00   40
  0.00E+00 -1.50E+04  1.00E-01
    0  0.00E+00
   61    0  0.00E+00
   62    0  0.00E+00
   63    0  0.00E+00
   64    0  0.00E+00
   65    0  0.00E+00
   66    0  0.00E+00
   67    0  0.00E+00
   68    0  0.00E+00
   69    0  0.00E+00
   70    0  0.00E+00
   71    0  0.00E+00
   72    0  0.00E+00
   73    0  0.00E+00
   74    0  0.00E+00
   75    0  0.00E+00
   76    0  0.00E+00
   77    0  0.00E+00
   78    0  0.00E+00
   79    0  0.00E+00
   80    0  0.00E+00

END
```

TIME STEP NO. = 370
TOTAL TIME = .77700E+07
TIME INTERVAL = .17850E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.22213E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-171.26430	1	72.57568
10.00	243.84	-171.43520	2	72.40480
.00	242.57	-170.00800	3	72.56204
10.00	242.57	-170.17220	4	72.39781
.00	241.30	-168.77110	5	72.52889
10.00	241.30	-168.92920	6	72.37083
.00	240.03	-167.55270	7	72.47725
10.00	240.03	-167.70510	8	72.32493
.00	238.76	-166.35180	9	72.40823
10.00	238.76	-166.49880	10	72.26120
.00	236.22	-164.00350	11	72.21654
10.00	236.22	-164.13070	12	72.08931
.00	233.68	-161.71090	13	71.96912
10.00	233.68	-161.82060	14	71.85936
.00	231.14	-159.46480	15	71.67516
10.00	231.14	-159.55920	16	71.58075
.00	228.60	-157.25620	17	71.34384
10.00	228.60	-157.33720	18	71.26282
.00	224.79	-153.99880	19	70.79114
10.00	224.79	-154.05610	20	70.73392
.00	220.98	-150.77580	21	70.20416
10.00	220.98	-150.81310	22	70.16692
.00	213.36	-144.34680	23	69.01320
10.00	213.36	-144.35040	24	69.00955
.00	205.74	-136.80330	25	68.93671
10.00	205.74	-136.80500	26	68.93504
.00	198.12	-129.25100	27	68.86896
10.00	198.12	-129.25160	28	68.86839
.00	190.50	-121.69010	29	68.80987
10.00	190.50	-121.69020	30	68.80984
.00	182.88	-114.12090	31	68.75916
10.00	182.88	-114.12070	32	68.75934
.00	175.26	-106.54360	33	68.71634
10.00	175.26	-106.54350	34	68.71654
.00	167.64	-98.95915	35	68.68085
10.00	167.64	-98.95913	36	68.68088
.00	160.02	-91.36005	37	68.65996
10.00	160.02	-91.35991	38	68.66010
.00	152.40	-83.75765	39	68.64235
10.00	152.40	-83.75743	40	68.64256
.00	144.78	-76.15228	41	68.62772
10.00	144.78	-76.15203	42	68.62797
.00	137.16	-68.54425	43	68.61575
10.00	137.16	-68.54402	44	68.61599
.00	129.54	-60.93388	45	68.60611
10.00	129.54	-60.93367	46	68.60632
.00	121.92	-53.32150	47	68.59849
10.00	121.92	-53.32131	48	68.59869
.00	114.30	-45.70741	49	68.59260
10.00	114.30	-45.70723	50	68.59277
.00	106.68	-38.09184	51	68.58817
10.00	106.68	-38.09168	52	68.58832
.00	99.06	-30.47508	53	68.58491
10.00	99.06	-30.47494	54	68.58506
.00	91.44	-22.85736	55	68.58265
10.00	91.44	-22.85724	56	68.58276

.00	83.82	-15.23885	57	68.58115
10.00	83.82	-15.23876	58	68.58124
.00	76.20	-7.61975	59	68.58026
10.00	76.20	-7.61968	60	68.58031
.00	68.58	.00000	61	68.58000
10.00	68.58	.00000	62	68.58000
.00	60.96	.00000	63	60.96000
10.00	60.96	.00000	64	60.96000
.00	53.34	.00000	65	53.34000
10.00	53.34	.00000	66	53.34000
.00	45.72	.00000	67	45.72000
10.00	45.72	.00000	68	45.72000
.00	38.10	.00000	69	38.10000
10.00	38.10	.00000	70	38.10000
.00	30.48	.00000	71	30.48000
10.00	30.48	.00000	72	30.48000
.00	22.86	.00000	73	22.86000
10.00	22.86	.00000	74	22.86000
.00	15.24	.00000	75	15.24000
10.00	15.24	.00000	76	15.24000
.00	7.62	.00000	77	7.62000
10.00	7.62	.00000	78	7.62000
.00	.00	.00000	79	.00000
10.00	.00	.00000	80	.00000

TIME STEP NO. = 732
TOTAL TIME = .15550E+08
TIME INTERVAL = .83190E+04
CUMULATIVE INFLOW INTO THE SYSTEM = -.23886E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1380.79800	3	-1138.22800
10.00	242.57	-1183.92500	4	-941.35510
.00	241.30	-695.13620	5	-453.83620
10.00	241.30	-566.49460	6	-325.19460
.00	240.03	-506.46250	7	-266.43250
10.00	240.03	-424.92170	8	-184.89170
.00	238.76	-417.86390	9	-179.10390
10.00	238.76	-364.07590	10	-125.31590
.00	236.22	-337.58080	11	-101.36080
10.00	236.22	-303.77160	12	-67.55160
.00	233.68	-292.44520	13	-58.76526
10.00	233.68	-270.51800	14	-36.83804
.00	231.14	-262.82100	15	-31.68102
10.00	231.14	-248.38420	16	-17.24416
.00	228.60	-241.45930	17	-12.85930
10.00	228.60	-232.04780	18	-3.44780
.00	224.79	-218.69730	19	6.09274
10.00	224.79	-213.46810	20	11.32185
.00	220.98	-201.74400	21	19.23596
10.00	220.98	-199.31990	22	21.66008
.00	213.36	-178.26970	23	35.09027
10.00	213.36	-177.98170	24	35.37833
.00	205.74	-169.98910	25	35.75088
10.00	205.74	-169.82350	26	35.91650
.00	198.12	-161.86390	27	36.25606
10.00	198.12	-161.76850	28	36.35150
.00	190.50	-153.86270	29	36.63731
10.00	190.50	-153.80750	30	36.69252
.00	182.88	-145.96100	31	36.91898
10.00	182.88	-145.92890	32	36.95110
.00	175.26	-138.13930	33	37.12065
10.00	175.26	-138.12050	34	37.13947
.00	167.64	-130.38150	35	37.25852
10.00	167.64	-130.37050	36	37.26948
.00	160.02	-122.70670	37	37.31328
10.00	160.02	-122.69990	38	37.32011
.00	152.40	-115.05160	39	37.34844
10.00	152.40	-115.04710	40	37.35289
.00	144.78	-107.41200	41	37.36798
10.00	144.78	-107.40900	42	37.37105
.00	137.16	-99.78464	43	37.37537
10.00	137.16	-99.78234	44	37.37767
.00	129.54	-92.16633	45	37.37366
10.00	129.54	-92.16449	46	37.37550
.00	121.92	-84.55457	47	37.36543
10.00	121.92	-84.55302	48	37.36699
.00	114.30	-76.94711	49	37.35290
10.00	114.30	-76.94573	50	37.35427
.00	106.68	-69.34212	51	37.33788
10.00	106.68	-69.34086	52	37.33914
.00	99.06	-61.73812	53	37.32190
10.00	99.06	-61.73699	54	37.32302
.00	91.44	-54.13394	55	37.30607
10.00	91.44	-54.13296	56	37.30705

.00	83.82	-46.52872	57	37.29128
10.00	83.82	-46.52789	58	37.29211
.00	76.20	-38.92186	59	37.27814
10.00	76.20	-38.92123	60	37.27877
.00	68.58	-31.31296	61	37.26704
10.00	68.58	-31.31259	62	37.26741
.00	60.96	-23.70181	63	37.25819
10.00	60.96	-23.70178	64	37.25822
.00	53.34	-16.08193	65	37.25807
10.00	53.34	-16.08192	66	37.25808
.00	45.72	-8.46195	67	37.25805
10.00	45.72	-8.46195	68	37.25806
.00	38.10	-.84195	69	37.25805
10.00	38.10	-.84195	70	37.25805
.00	30.48	6.77805	71	37.25805
10.00	30.48	6.77805	72	37.25805
.00	22.86	14.39804	73	37.25805
10.00	22.86	14.39804	74	37.25805
.00	15.24	22.01804	75	37.25804
10.00	15.24	22.01804	76	37.25804
.00	7.62	29.63804	77	37.25804
10.00	7.62	29.63804	78	37.25804
.00	.00	37.25804	79	37.25804
10.00	.00	37.25804	80	37.25804

TIME STEP NO. = 730
TOTAL TIME = .15550E+08
TIME INTERVAL = .25599E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.45929E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-15000.00000	1	-14756.16000
10.00	243.84	-15000.00000	2	-14756.16000
.00	242.57	-1705.43800	3	-1462.86800
10.00	242.57	-1465.74700	4	-1223.17700
.00	241.30	-899.67750	5	-658.37750
10.00	241.30	-739.36590	6	-498.06590
.00	240.03	-667.66820	7	-427.63820
10.00	240.03	-566.12980	8	-326.09980
.00	238.76	-557.92870	9	-319.16870
10.00	238.76	-491.26340	10	-252.50340
.00	236.22	-459.66100	11	-223.44100
10.00	236.22	-417.88270	12	-181.66270
.00	233.68	-406.67080	13	-172.99070
10.00	233.68	-379.87270	14	-146.19270
.00	231.14	-373.78760	15	-142.64760
10.00	231.14	-356.57510	16	-125.43510
.00	228.60	-351.75790	17	-123.15790
10.00	228.60	-341.16580	18	-112.56580
.00	224.79	-331.34190	19	-106.55190
10.00	224.79	-326.33940	20	-101.54940
.00	220.98	-319.58940	21	-98.60937
10.00	220.98	-318.85560	22	-97.87557
.00	213.36	-317.24170	23	-103.88170
10.00	213.36	-318.76930	24	-105.40930
.00	205.74	-306.98070	25	-101.24070
10.00	205.74	-308.43490	26	-102.69490
.00	198.12	-293.02570	27	-94.90576
10.00	198.12	-294.48540	28	-96.36539
.00	190.50	-276.63770	29	-86.13770
10.00	190.50	-278.12530	30	-87.62528
.00	182.88	-258.29680	31	-75.41681
10.00	182.88	-259.75960	32	-76.87961
.00	175.26	-238.51720	33	-63.25719
10.00	175.26	-239.83550	34	-64.57547
.00	167.64	-217.81910	35	-50.17908
10.00	167.64	-218.80450	36	-51.16454
.00	160.02	-202.36060	37	-42.34057
10.00	160.02	-203.31690	38	-43.29690
.00	152.40	-183.99440	39	-31.59445
10.00	152.40	-184.62410	40	-32.22414
.00	144.78	-166.03820	41	-21.25824
10.00	144.78	-166.32340	42	-21.54340
.00	137.16	-150.42000	43	-13.25998
10.00	137.16	-150.54890	44	-13.38889
.00	129.54	-136.55220	45	-7.01221
10.00	129.54	-136.61200	46	-7.07199
.00	121.92	-124.02330	47	-2.10330
10.00	121.92	-124.05420	48	-2.13417
.00	114.30	-112.53560	49	1.76437
10.00	114.30	-112.55590	50	1.74409
.00	106.68	-101.86820	51	4.81177
10.00	106.68	-101.88610	52	4.79395
.00	99.06	-91.85320	53	7.20682
10.00	99.06	-91.87212	54	7.18790
.00	91.44	-82.36026	55	9.07975
10.00	91.44	-82.38199	56	9.05803

.00	83.82	-73.28662	57	10.53338
10.00	83.82	-73.31233	58	10.50768
.00	76.20	-64.54982	59	11.65018
10.00	76.20	-64.58092	60	11.61908
.00	68.58	-56.08281	61	12.49720
10.00	68.58	-56.12136	62	12.45864
.00	60.96	-47.83045	63	13.12955
10.00	60.96	-47.87951	64	13.08049
.00	53.34	-40.02507	65	13.31493
10.00	53.34	-40.03992	66	13.30008
.00	45.72	-32.34859	67	13.37141
10.00	45.72	-32.35217	68	13.36783
.00	38.10	-24.71585	69	13.38415
10.00	38.10	-24.71641	70	13.38359
.00	30.48	-17.09409	71	13.38591
10.00	30.48	-17.09412	72	13.38588
.00	22.86	-9.47398	73	13.38602
10.00	22.86	-9.47397	74	13.38603
.00	15.24	-1.85397	75	13.38603
10.00	15.24	-1.85396	76	13.38604
.00	7.62	5.76603	77	13.38603
10.00	7.62	5.76604	78	13.38604
.00	.00	13.38603	79	13.38603
10.00	.00	13.38604	80	13.38604

TIME STEP NO. = 730
TOTAL TIME = .15550E+08
TIME INTERVAL = .25599E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.22213E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-194.67790	1	49.16214
10.00	243.84	-194.98790	2	48.85207
.00	242.57	-193.43410	3	49.13589
10.00	242.57	-193.73180	4	48.83822
.00	241.30	-192.22820	5	49.07182
10.00	241.30	-192.51540	6	48.78458
.00	240.03	-191.05860	7	48.97142
10.00	240.03	-191.33720	8	48.69275
.00	238.76	-189.92380	9	48.83618
10.00	238.76	-190.19560	10	48.56435
.00	236.22	-187.76460	11	48.45541
10.00	236.22	-188.00570	12	48.21428
.00	233.68	-185.72760	13	47.95242
10.00	233.68	-185.94500	14	47.73501
.00	231.14	-183.80260	15	47.33740
10.00	231.14	-184.00230	16	47.13768
.00	228.60	-181.98010	17	46.61993
10.00	228.60	-182.16730	18	46.43272
.00	224.79	-179.43140	19	45.35861
10.00	224.79	-179.58530	20	45.20465
.00	220.98	-177.06190	21	43.91806
10.00	220.98	-177.19200	22	43.78802
.00	213.36	-172.81560	23	40.54443
10.00	213.36	-172.82200	24	40.53796
.00	205.74	-165.41950	25	40.32046
10.00	205.74	-165.42050	26	40.31947
.00	198.12	-158.03830	27	40.08174
10.00	198.12	-158.03620	28	40.08378
.00	190.50	-150.66480	29	39.83522
10.00	190.50	-150.66120	30	39.83879
.00	182.88	-143.29300	31	39.58701
10.00	182.88	-143.28880	32	39.59115
.00	175.26	-135.91760	33	39.34242
10.00	175.26	-135.91350	34	39.34647
.00	167.64	-128.53400	35	39.10603
10.00	167.64	-128.53070	36	39.10933
.00	160.02	-121.04790	37	38.97208
10.00	160.02	-121.04480	38	38.97519
.00	152.40	-113.55500	39	38.84501
10.00	152.40	-113.55200	40	38.84799
.00	144.78	-106.05410	41	38.72592
10.00	144.78	-106.05120	42	38.72878
.00	137.16	-98.54432	43	38.61569
10.00	137.16	-98.54156	44	38.61845
.00	129.54	-91.02502	45	38.51498
10.00	129.54	-91.02240	46	38.51760
.00	121.92	-83.49578	47	38.42422
10.00	121.92	-83.49327	48	38.42674
.00	114.30	-75.95637	49	38.34363
10.00	114.30	-75.95399	50	38.34602
.00	106.68	-68.40679	51	38.27321
10.00	106.68	-68.40458	52	38.27542
.00	99.06	-60.84727	53	38.21274
10.00	99.06	-60.84526	54	38.21475
.00	91.44	-53.27820	55	38.16181
10.00	91.44	-53.27641	56	38.16359

.00	83.82	-45.70013	57	38.11986
10.00	83.82	-45.69864	58	38.12136
.00	76.20	-38.11379	59	38.08621
10.00	76.20	-38.11266	60	38.08733
.00	68.58	-30.51995	61	38.06005
10.00	68.58	-30.51928	62	38.06072
.00	60.96	-22.91941	63	38.04059
10.00	60.96	-22.91934	64	38.04065
.00	53.34	-15.29958	65	38.04042
10.00	53.34	-15.29957	66	38.04043
.00	45.72	-7.67961	67	38.04039
10.00	45.72	-7.67961	68	38.04039
.00	38.10	-.05961	69	38.04038
10.00	38.10	-.05961	70	38.04038
.00	30.48	7.56038	71	38.04038
10.00	30.48	7.56038	72	38.04038
.00	22.86	15.18037	73	38.04038
10.00	22.86	15.18037	74	38.04038
.00	15.24	22.80037	75	38.04037
10.00	15.24	22.80037	76	38.04037
.00	7.62	30.42037	77	38.04037
10.00	7.62	30.42037	78	38.04037
.00	.00	38.04037	79	38.04037
10.00	.00	38.04037	80	38.04037

TIME STEP NO. = 1481
TOTAL TIME = .31100E+08
TIME INTERVAL = .15598E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.18886E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-123.42470	1	120.41530
10.00	243.84	-124.54720	2	119.29280
.00	242.57	-124.06670	3	118.50330
10.00	242.57	-125.20270	4	117.36730
.00	241.30	-124.74700	5	116.55300
10.00	241.30	-125.90370	6	115.39630
.00	240.03	-125.46910	7	114.56090
10.00	240.03	-126.65400	8	113.37600
.00	238.76	-126.23640	9	112.52360
10.00	238.76	-127.45760	10	111.30230
.00	236.22	-127.94370	11	108.27630
10.00	236.22	-129.22360	12	106.99640
.00	233.68	-129.89310	13	103.78690
10.00	233.68	-131.26090	14	102.41910
.00	231.14	-132.13580	15	99.00422
10.00	231.14	-133.62460	16	97.51544
.00	228.60	-134.73870	17	93.86127
10.00	228.60	-136.38620	18	92.21385
.00	224.79	-139.58900	19	85.20099
10.00	224.79	-141.41110	20	83.37891
.00	220.98	-145.95850	21	75.02145
10.00	220.98	-147.98480	22	72.99524
.00	213.36	-168.10820	23	45.25180
10.00	213.36	-167.63430	24	45.72566
.00	205.74	-162.67670	25	43.06335
10.00	205.74	-162.38980	26	43.35019
.00	198.12	-157.05960	27	41.06036
10.00	198.12	-156.88510	28	41.23491
.00	190.50	-151.24980	29	39.25023
10.00	190.50	-151.14320	30	39.35680
.00	182.88	-145.24710	31	37.63295
10.00	182.88	-145.18260	32	37.69743
.00	175.26	-139.05630	33	36.20369
10.00	175.26	-139.01940	34	36.24055
.00	167.64	-132.68560	35	34.95434
10.00	167.64	-132.66900	36	34.97099
.00	160.02	-125.70230	37	34.31771
10.00	160.02	-125.69030	38	34.32967
.00	152.40	-118.64110	39	33.75890
10.00	152.40	-118.63200	40	33.76799
.00	144.78	-111.50770	41	33.27232
10.00	144.78	-111.50040	42	33.27962
.00	137.16	-104.30780	43	32.85223
10.00	137.16	-104.30160	44	32.85836
.00	129.54	-97.04709	45	32.49291
10.00	129.54	-97.04178	46	32.49821
.00	121.92	-89.73136	47	32.18864
10.00	121.92	-89.72669	48	32.19331
.00	114.30	-82.36617	49	31.93384
10.00	114.30	-82.36201	50	31.93800
.00	106.68	-74.95688	51	31.72311
10.00	106.68	-74.95318	52	31.72682
.00	99.06	-67.50876	53	31.55126
10.00	99.06	-67.50548	54	31.55453
.00	91.44	-60.02665	55	31.41336
10.00	91.44	-60.02383	56	31.41618

.00	83.82	-52.51527	57	31.30473
10.00	83.82	-52.51292	58	31.30708
.00	76.20	-44.97899	59	31.22101
10.00	76.20	-44.97715	60	31.22284
.00	68.58	-37.42182	61	31.15818
10.00	68.58	-37.42058	62	31.15942
.00	60.96	-29.84746	63	31.11253
10.00	60.96	-29.84692	64	31.11308
.00	53.34	-22.22872	65	31.11128
10.00	53.34	-22.22863	66	31.11137
.00	45.72	-14.60889	67	31.11111
10.00	45.72	-14.60888	68	31.11112
.00	38.10	-6.98891	69	31.11109
10.00	38.10	-6.98891	70	31.11109
.00	30.48	.63109	71	31.11109
10.00	30.48	.63109	72	31.11109
.00	22.86	8.25109	73	31.11109
10.00	22.86	8.25108	74	31.11108
.00	15.24	15.87109	75	31.11109
10.00	15.24	15.87108	76	31.11108
.00	7.62	23.49108	77	31.11108
10.00	7.62	23.49108	78	31.11108
.00	.00	31.11108	79	31.11108
10.00	.00	31.11108	80	31.11108

OP6.DAT OUTPUT FILE

TIME STEP NO. = 1491
TOTAL TIME = .31100E+08
TIME INTERVAL = .21984E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.40929E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-124.91120	1	118.92880
10.00	243.84	-126.44050	2	117.39950
.00	242.57	-125.65910	3	116.91090
10.00	242.57	-127.21030	4	115.35970
.00	241.30	-126.45310	5	114.84700
10.00	241.30	-128.03610	6	113.26390
.00	240.03	-127.29720	7	112.73280
10.00	240.03	-128.92270	8	111.10730
.00	238.76	-128.19620	9	110.56380
10.00	238.76	-129.87560	10	108.88440
.00	236.22	-130.20480	11	106.01520
10.00	236.22	-131.97980	12	104.24020
.00	233.68	-132.51260	13	101.16740
10.00	233.68	-134.42690	14	99.25306
.00	231.14	-135.18840	15	95.95159
10.00	231.14	-137.29300	16	93.84702
.00	228.60	-138.32480	17	90.27524
10.00	228.60	-140.67930	18	87.92075
.00	224.79	-144.27150	19	80.51848
10.00	224.79	-146.93850	20	77.85149
.00	220.98	-152.30550	21	68.67452
10.00	220.98	-155.35070	22	65.62930
.00	213.36	-182.36760	23	30.99239
10.00	213.36	-181.67400	24	31.68601
.00	205.74	-177.53580	25	28.20416
10.00	205.74	-177.11380	26	28.62622
.00	198.12	-172.50870	27	25.61134
10.00	198.12	-172.25120	28	25.86884
.00	190.50	-167.26890	29	23.23111
10.00	190.50	-167.11170	30	23.38828
.00	182.88	-161.80940	31	21.07062
10.00	182.88	-161.71460	32	21.16540
.00	175.26	-156.12990	33	19.13013
10.00	175.26	-156.07570	34	19.18433
.00	167.64	-150.23480	35	17.40520
10.00	167.64	-150.20970	36	17.43025
.00	160.02	-143.43910	37	16.58090
10.00	160.02	-143.42210	38	16.59792
.00	152.40	-136.55000	39	15.85004
10.00	152.40	-136.53790	40	15.86214
.00	144.78	-129.57330	41	15.20671
10.00	144.78	-129.56420	42	15.21580
.00	137.16	-122.51530	43	14.64471
10.00	137.16	-122.50810	44	14.65190
.00	129.54	-115.38230	45	14.15765
10.00	129.54	-115.37630	46	14.16365
.00	121.92	-108.18080	47	13.73916
10.00	121.92	-108.17560	48	13.74438
.00	114.30	-100.91710	49	13.38290
10.00	114.30	-100.91240	50	13.38762
.00	106.68	-93.59732	51	13.08268
10.00	106.68	-93.59292	52	13.08708
.00	99.06	-86.22756	53	12.83247
10.00	99.06	-86.22332	54	12.83670
.00	91.44	-78.81354	55	12.62646
10.00	91.44	-78.80931	56	12.63070

.00	83.82	-71.36084	57	12.45916
10.00	83.82	-71.35640	58	12.46360
.00	76.20	-63.87463	59	12.32537
10.00	76.20	-63.86971	60	12.33028
.00	68.58	-56.35977	61	12.22023
10.00	68.58	-56.35402	62	12.22598
.00	60.96	-48.82079	63	12.13921
10.00	60.96	-48.81369	64	12.14631
.00	53.34	-41.22811	65	12.11189
10.00	53.34	-41.22581	66	12.11418
.00	45.72	-33.61690	67	12.10310
10.00	45.72	-33.61632	68	12.10368
.00	38.10	-25.99902	69	12.10098
10.00	38.10	-25.99892	70	12.10108
.00	30.48	-18.37935	71	12.10065
10.00	30.48	-18.37934	72	12.10066
.00	22.86	-10.75937	73	12.10063
10.00	22.86	-10.75937	74	12.10063
.00	15.24	-3.13937	75	12.10063
10.00	15.24	-3.13937	76	12.10063
.00	7.62	4.48063	77	12.10063
10.00	7.62	4.48063	78	12.10063
.00	.00	12.10063	79	12.10063
10.00	.00	12.10063	80	12.10063

TIME STEP NO. = 1460
TOTAL TIME = .31100E+08
TIME INTERVAL = .21848E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.22213E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-212.69470	1	31.14528
10.00	243.84	-212.76530	2	31.07474
.00	242.57	-211.43130	3	31.13869
10.00	242.57	-211.49870	4	31.07129
.00	241.30	-210.17740	5	31.12256
10.00	241.30	-210.24220	6	31.05782
.00	240.03	-208.93280	7	31.09721
10.00	240.03	-208.99530	8	31.03470
.00	238.76	-207.69690	9	31.06308
10.00	238.76	-207.75750	10	31.00244
.00	236.22	-205.25290	11	30.96707
10.00	236.22	-205.30560	12	30.91446
.00	233.68	-202.83960	13	30.84044
10.00	233.68	-202.88590	14	30.79410
.00	231.14	-200.45390	15	30.68611
10.00	231.14	-200.49540	16	30.64456
.00	228.60	-198.09300	17	30.50696
10.00	228.60	-198.13120	18	30.46880
.00	224.79	-194.59520	19	30.16478
10.00	224.79	-194.62530	20	30.16470
.00	220.98	-191.13770	21	29.84226
10.00	220.98	-191.16240	22	29.81755
.00	213.36	-184.32250	23	29.03754
10.00	213.36	-184.32470	24	29.03526
.00	205.74	-176.75380	25	28.98624
10.00	205.74	-176.75440	26	28.98558
.00	198.12	-169.19030	27	28.92966
10.00	198.12	-169.19010	28	28.92992
.00	190.50	-161.63040	29	28.86957
10.00	190.50	-161.62970	30	28.87033
.00	182.88	-154.07250	31	28.80749
10.00	182.88	-154.07150	32	28.80849
.00	175.26	-146.51510	33	28.74487
10.00	175.26	-146.51410	34	28.74589
.00	167.64	-138.95710	35	28.68289
10.00	167.64	-138.95620	36	28.68375
.00	160.02	-131.37140	37	28.64862
10.00	160.02	-131.37060	38	28.64943
.00	152.40	-123.78460	39	28.61534
10.00	152.40	-123.78390	40	28.61612
.00	144.78	-116.19660	41	28.58337
10.00	144.78	-116.19590	42	28.58413
.00	137.16	-108.60700	43	28.55300
10.00	137.16	-108.60630	44	28.55373
.00	129.54	-101.01550	45	28.52445
10.00	129.54	-101.01480	46	28.52519
.00	121.92	-93.42206	47	28.49795
10.00	121.92	-93.42132	48	28.49868
.00	114.30	-85.82639	49	28.47362
10.00	114.30	-85.82567	50	28.47434
.00	106.68	-78.22841	51	28.45159
10.00	106.68	-78.22771	52	28.45229
.00	99.06	-70.62804	53	28.43198
10.00	99.06	-70.62739	54	28.43262
.00	91.44	-63.02516	55	28.41485
10.00	91.44	-63.02457	56	28.41544

.00	83.82	-55.41975	57	28.40024
10.00	83.82	-55.41926	58	28.40074
.00	76.20	-47.81183	59	28.38816
10.00	76.20	-47.81144	60	28.38856
.00	68.58	-40.20145	61	28.37855
10.00	68.58	-40.20118	62	28.37882
.00	60.96	-32.58873	63	28.37127
10.00	60.96	-32.58860	64	28.37140
.00	53.34	-24.96906	65	28.37094
10.00	53.34	-24.96904	66	28.37096
.00	45.72	-17.34912	67	28.37088
10.00	45.72	-17.34912	68	28.37088
.00	38.10	-9.72912	69	28.37088
10.00	38.10	-9.72912	70	28.37088
.00	30.48	-2.10912	71	28.37088
10.00	30.48	-2.10912	72	28.37087
.00	22.86	5.51087	73	28.37087
10.00	22.86	5.51087	74	28.37087
.00	15.24	13.13087	75	28.37087
10.00	15.24	13.13087	76	28.37087
.00	7.62	20.75088	77	28.37088
10.00	7.62	20.75087	78	28.37087
.00	.00	28.37087	79	28.37087
10.00	.00	28.37087	80	28.37087

TIME STEP NO. = 1841
TOTAL TIME = .38880E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.11213E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-84.85016	1	158.98980
10.00	243.84	-86.49163	2	157.34840
.00	242.57	-85.32572	3	157.24430
10.00	242.57	-87.00377	4	155.56620
.00	241.30	-85.83724	5	155.46280
10.00	241.30	-87.56350	6	153.73650
.00	240.03	-86.38868	7	153.64130
10.00	240.03	-88.17563	8	151.85440
.00	238.76	-86.98450	9	151.77550
10.00	238.76	-88.84570	10	149.91430
.00	236.22	-88.35242	11	147.86760
10.00	236.22	-90.36367	12	145.85630
.00	233.68	-89.97767	13	143.70230
10.00	233.68	-92.19612	14	141.48390
.00	231.14	-91.93299	15	139.20700
10.00	231.14	-94.42711	16	136.71290
.00	228.60	-94.32106	17	134.27890
10.00	228.60	-97.17480	18	131.42520
.00	224.79	-99.15677	19	125.63320
10.00	224.79	-102.53560	20	122.25440
.00	220.98	-106.32710	21	114.65290
10.00	220.98	-110.35540	22	110.62460
.00	213.36	-139.66260	23	73.69739
10.00	213.36	-138.22400	24	75.13602
.00	205.74	-137.00400	25	68.73604
10.00	205.74	-136.10330	26	69.63670
.00	198.12	-134.14560	27	63.97435
10.00	198.12	-133.57830	28	64.54170
.00	190.50	-131.02680	29	59.47318
10.00	190.50	-130.66650	30	59.83350
.00	182.88	-127.60370	31	55.27633
10.00	182.88	-127.37360	32	55.50635
.00	175.26	-123.84490	33	51.41509
10.00	175.26	-123.70000	34	51.56002
.00	167.64	-119.72920	35	47.91078
10.00	167.64	-119.64480	36	47.99516
.00	160.02	-114.05180	37	45.96823
10.00	160.02	-113.99400	38	46.02602
.00	152.40	-108.15490	39	44.24510
10.00	152.40	-108.11330	40	44.28664
.00	144.78	-102.04720	41	42.73279
10.00	144.78	-102.01580	42	42.76418
.00	137.16	-95.73974	43	41.42026
10.00	137.16	-95.71488	44	41.44513
.00	129.54	-89.24536	45	40.29464
10.00	129.54	-89.22492	46	40.31507
.00	121.92	-82.57834	47	39.34167
10.00	121.92	-82.56111	48	39.35890
.00	114.30	-75.75391	49	38.54610
10.00	114.30	-75.73916	50	38.56084
.00	106.68	-68.78788	51	37.89212
10.00	106.68	-68.77521	52	37.90478
.00	99.06	-61.69629	53	37.36373
10.00	99.06	-61.68549	54	37.37453
.00	91.44	-54.49497	55	36.94504
10.00	91.44	-54.48596	56	36.95405

.00	83.82	-47.19941	57	36.62059
10.00	83.82	-47.19220	58	36.62780
.00	76.20	-39.82429	59	36.37570
10.00	76.20	-39.81902	60	36.38098
.00	68.58	-32.38338	61	36.19662
10.00	68.58	-32.38026	62	36.19975
.00	60.96	-24.88917	63	36.07083
10.00	60.96	-24.88856	64	36.07144
.00	53.34	-17.27038	65	36.06963
10.00	53.34	-17.27032	66	36.06968
.00	45.72	-9.65048	67	36.06952
10.00	45.72	-9.65048	68	36.06952
.00	38.10	-2.03049	69	36.06951
10.00	38.10	-2.03049	70	36.06950
.00	30.48	5.58950	71	36.06950
10.00	30.48	5.58950	72	36.06950
.00	22.86	13.20950	73	36.06950
10.00	22.86	13.20950	74	36.06950
.00	15.24	20.82950	75	36.06950
10.00	15.24	20.82949	76	36.06950
.00	7.62	28.44949	77	36.06949
10.00	7.62	28.44949	78	36.06949
.00	.00	36.06949	79	36.06949
10.00	.00	36.06949	80	36.06949

TIME STEP NO. = 1851
TOTAL TIME = .38880E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.33225E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-85.06814	1	158.77190
10.00	243.84	-86.88406	2	156.95590
.00	242.57	-85.56662	3	157.00340
10.00	242.57	-87.42415	4	155.14590
.00	241.30	-86.10304	5	155.19700
10.00	241.30	-88.01516	6	153.28480
.00	240.03	-86.68161	7	153.34840
10.00	240.03	-88.66236	8	151.36760
.00	238.76	-87.30718	9	151.45280
10.00	238.76	-89.37182	10	149.38820
.00	236.22	-88.74561	11	147.47440
10.00	236.22	-90.98216	12	145.23780
.00	233.68	-90.45866	13	143.22130
10.00	233.68	-92.93252	14	140.74750
.00	231.14	-92.52612	15	138.61390
10.00	231.14	-95.31641	16	135.82360
.00	228.60	-95.06186	17	133.53810
10.00	228.60	-98.26663	18	130.33340
.00	224.79	-100.23780	19	124.55220
10.00	224.79	-104.06280	20	120.72720
.00	220.98	-108.02500	21	112.95500
10.00	220.98	-112.62870	22	108.35130
.00	213.36	-145.50740	23	67.85260
10.00	213.36	-143.81640	24	69.54355
.00	205.74	-143.52690	25	62.21309
10.00	205.74	-142.46100	26	63.27905
.00	198.12	-141.41940	27	56.70054
10.00	198.12	-140.74370	28	57.37633
.00	190.50	-139.11540	29	51.38461
10.00	190.50	-138.68330	30	51.81670
.00	182.88	-136.56160	31	46.31842
10.00	182.88	-136.28280	32	46.59721
.00	175.26	-133.71600	33	41.54404
10.00	175.26	-133.53600	34	41.72399
.00	167.64	-130.54470	35	37.09532
10.00	167.64	-130.43270	36	37.20732
.00	160.02	-125.30460	37	34.71542
10.00	160.02	-125.22930	38	34.79069
.00	152.40	-119.82830	39	32.57167
10.00	152.40	-119.77550	40	32.62452
.00	144.78	-114.12070	41	30.65929
10.00	144.78	-114.08170	42	30.69829
.00	137.16	-108.18960	43	28.97042
10.00	137.16	-108.15930	44	29.00066
.00	129.54	-102.04520	45	27.49476
10.00	129.54	-102.02070	46	27.51926
.00	121.92	-95.70003	47	26.21997
10.00	121.92	-95.67948	48	26.24053
.00	114.30	-89.16789	49	25.13212
10.00	114.30	-89.15022	50	25.14979
.00	106.68	-82.46398	51	24.21602
10.00	106.68	-82.44853	52	24.23148
.00	99.06	-75.60435	53	23.45566
10.00	99.06	-75.59066	54	23.46936
.00	91.44	-68.60545	55	22.83456
10.00	91.44	-68.59320	56	22.84681

.00	83.82	-61.48386	57	22.33613
10.00	83.82	-61.47279	58	22.34721
.00	76.20	-54.25597	59	21.94402
10.00	76.20	-54.24579	60	21.95420
.00	68.58	-46.93754	61	21.64246
10.00	68.58	-46.92797	62	21.65204
.00	60.96	-39.54347	63	21.41653
10.00	60.96	-39.53416	64	21.42584
.00	53.34	-31.95019	65	21.38981
10.00	53.34	-31.94801	66	21.39199
.00	45.72	-24.33625	67	21.38375
10.00	45.72	-24.33592	68	21.38408
.00	38.10	-16.71709	69	21.38291
10.00	38.10	-16.71707	70	21.38293
.00	30.48	-9.09715	71	21.38285
10.00	30.48	-9.09716	72	21.38284
.00	22.86	-1.47716	73	21.38284
10.00	22.86	-1.47717	74	21.38283
.00	15.24	6.14284	75	21.38284
10.00	15.24	6.14283	76	21.38283
.00	7.62	13.76284	77	21.38284
10.00	7.62	13.76283	78	21.38283
.00	.00	21.38284	79	21.38284
10.00	.00	21.38283	80	21.38283

TIME STEP NO. = 1820
TOTAL TIME = .38880E+08
TIME INTERVAL = .25600E+05
CUMULATIVE INFLOW INTO THE SYSTEM = -.22213E+03

X	Y	PRESS. HEAD	N	TOTAL HEAD
.00	243.84	-215.75390	1	28.08613
10.00	243.84	-215.79970	2	28.04031
.00	242.57	-214.48830	3	28.08168
10.00	242.57	-214.53210	4	28.03795
.00	241.30	-213.22920	5	28.07080
10.00	241.30	-213.27120	6	28.02882
.00	240.03	-211.97630	7	28.05373
10.00	240.03	-212.01680	8	28.01320
.00	238.76	-210.72930	9	28.03069
10.00	238.76	-210.76870	10	27.99130
.00	236.22	-208.25430	11	27.96571
10.00	236.22	-208.28840	12	27.93163
.00	233.68	-205.80020	13	27.87978
10.00	233.68	-205.83020	14	27.84976
.00	231.14	-203.36520	15	27.77477
10.00	231.14	-203.39230	16	27.74765
.00	228.60	-200.94770	17	27.65233
10.00	228.60	-200.97280	18	27.62721
.00	224.79	-197.35210	19	27.43788
10.00	224.79	-197.37210	20	27.41791
.00	220.98	-193.78600	21	27.19402
10.00	220.98	-193.80290	22	27.17709
.00	213.36	-186.72970	23	26.63033
10.00	213.36	-186.73130	24	26.62871
.00	205.74	-179.14620	25	26.59377
10.00	205.74	-179.14670	26	26.59334
.00	198.12	-171.56750	27	26.55249
10.00	198.12	-171.56730	28	26.55273
.00	190.50	-163.99220	29	26.50778
10.00	190.50	-163.99160	30	26.50841
.00	182.88	-156.41920	31	26.46081
10.00	182.88	-156.41840	32	26.46162
.00	175.26	-148.84730	33	26.41267
10.00	175.26	-148.84650	34	26.41348
.00	167.64	-141.27570	35	26.36432
10.00	167.64	-141.27500	36	26.36499
.00	160.02	-133.68250	37	26.33749
10.00	160.02	-133.68190	38	26.33812
.00	152.40	-126.08880	39	26.31117
10.00	152.40	-126.08820	40	26.31177
.00	144.78	-118.49440	41	26.28564
10.00	144.78	-118.49370	42	26.28625
.00	137.16	-110.89880	43	26.26123
10.00	137.16	-110.89820	44	26.26180
.00	129.54	-103.30190	45	26.23814
10.00	129.54	-103.30130	46	26.23872
.00	121.92	-95.70341	47	26.21660
10.00	121.92	-95.70283	48	26.21717
.00	114.30	-88.10323	49	26.19678
10.00	114.30	-88.10266	50	26.19735
.00	106.68	-80.50117	51	26.17883
10.00	106.68	-80.50063	52	26.17938
.00	99.06	-72.89716	53	26.16286
10.00	99.06	-72.89662	54	26.16340
.00	91.44	-65.29109	55	26.14892
10.00	91.44	-65.29060	56	26.14941

.00	83.82	-57.68301	57	26.13699
10.00	83.82	-57.68260	58	26.13740
.00	76.20	-50.07299	59	26.12701
10.00	76.20	-50.07265	60	26.12735
.00	68.58	-42.46114	61	26.11886
10.00	68.58	-42.46088	62	26.11912
.00	60.96	-34.84760	63	26.11240
10.00	60.96	-34.84743	64	26.11257
.00	53.34	-27.22807	65	26.11192
10.00	53.34	-27.22804	66	26.11196
.00	45.72	-19.60819	67	26.11181
10.00	45.72	-19.60819	68	26.11181
.00	38.10	-11.98821	69	26.11179
10.00	38.10	-11.98821	70	26.11178
.00	30.48	-4.36822	71	26.11178
10.00	30.48	-4.36822	72	26.11178
.00	22.86	3.25178	73	26.11178
10.00	22.86	3.25178	74	26.11178
.00	15.24	10.87178	75	26.11178
10.00	15.24	10.87178	76	26.11178
.00	7.62	18.49178	77	26.11178
10.00	7.62	18.49178	78	26.11178
.00	.00	26.11178	79	26.11178
10.00	.00	26.11178	80	26.11178

APPENDIX E3

GEOCHEMISTRY MODELING RESULTS

MINTEQA2 OUTPUT FOR METAL SPECIATION

Table E-3.1. Summary of MINTEQA2 model run boundary conditions for soluble metals speciation.

SITE	TREATMENT	DEPTH	DATE	EXCLUDED SOLIDS
MINTEQA2 MODEL BOUNDARY CONDITIONS All runs performed at 25 degrees C Values for pH fixed at sample value Values of pCO_2 fixed at 0.003 atm only when sample pH > 4.5 Carbonate concentration represents carbonate alkalinity Values for Eh calculated Davies equation used to compute activity coefficients No precipitation of solid phases permitted[1]				
07 - Rocker	Control	40	8-15-90	All[1]
07 - Rocker	Ag-till	90	4-30-92	All[1]
21 - Ramsay	Control	40	8-15-90	All[1]
21 - Ramsay	Control	90	4-29-92	All[1]
33 - Opportunity	Control	40	4-29-92	All[1]
33 - Opportunity	Control	90	4-29-92	All[1]
33 - Opportunity	Ag-till	40	8-15-90	All[1]

Sample 9007c40 - Aqueous speciation at fixed pH; no solids allowed

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Temperature (Celsius): 25.00
Units of concentration: MG/L
Ionic strength to be computed.
Carbonate concentration represents carbonate alkalinity.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 200
The method used to compute activity coefficients is: Davies equation
Intermediate output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	3.236E-06	-5.490	0.000E-01
30	Al+3	1.000E-02	-2.000	1.230E-01
160	Cd+2	1.000E-03	-3.000	1.800E-02
231	Cu+2	1.000E-02	-2.000	6.320E-01
150	Ca+2	1.000E+00	0.000	2.040E+01
281	Fe+3	1.000E-02	-2.000	6.800E-01
600	Pb+2	1.000E-03	-3.000	4.430E-02
460	Mg+2	1.000E-01	-1.000	2.850E+00
470	Mn+2	1.000E-02	-2.000	7.910E-01
410	K+1	1.000E-01	-1.000	6.180E+00
500	Na+1	1.000E+01	1.000	1.490E+02
950	Zn+2	1.000E-01	-1.000	3.960E+00
732	SO4-2	1.000E+01	1.000	2.110E+02
580	PO4-3	1.000E-06	-6.000	6.400E-02
492	NO3-1	1.000E-01	-1.000	8.410E+00
270	F-1	1.000E-01	-1.000	1.040E+00
180	Cl-1	1.000E-01	-1.000	6.350E+00
140	CO3-2	6.457E-10	-9.190	2.098E+01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 8.116E-03 Sum of ANIONS = 5.466E-03

PERCENT DIFFERENCE = 1.951E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

CO3-2	13.2	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	86.6	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
Al+3	3.6	PERCENT BOUND IN SPECIES # 302700	AlF +2
	57.5	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	38.0	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
Cd+2	74.7	PERCENT BOUND IN SPECIES # 160	Cd+2
	19.7	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	4.1	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +
Cu+2	69.4	PERCENT BOUND IN SPECIES # 231	Cu+2
	2.3	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	13.0	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
	15.1	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +
Ca+2	83.9	PERCENT BOUND IN SPECIES # 150	Ca+2
	15.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
Fe+3	1.3	PERCENT BOUND IN SPECIES #2813300	FeOH +2
	98.3	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
Pb+2	50.5	PERCENT BOUND IN SPECIES # 600	Pb+2
	26.0	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ
	5.3	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ
	17.4	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +
Mg+2	85.5	PERCENT BOUND IN SPECIES # 460	Mg+2
	13.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Mn+2	85.0	PERCENT BOUND IN SPECIES # 470	Mn+2
	14.2	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
K+1	99.0	PERCENT BOUND IN SPECIES # 410	K+1
Na+1	99.3	PERCENT BOUND IN SPECIES # 500	Na+1
Zn+2	78.4	PERCENT BOUND IN SPECIES # 950	Zn+2
	16.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	4.3	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
SO4-2	92.9	PERCENT BOUND IN SPECIES # 732	SO4-2
	3.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
	2.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
PO4-3	96.2	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	2.5	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
F-1	79.3	PERCENT BOUND IN SPECIES # 270	F-1
	9.6	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	9.5	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ

Cl-1 100.0 PERCENT BOUND IN SPECIES # 180 Cl-1

H2O 98.6 PERCENT BOUND IN SPECIES #2813301 FeOH2 +

H+1 7.1 PERCENT BOUND IN SPECIES #3301400 HCO3 -
93.0 PERCENT BOUND IN SPECIES #3301401 H2CO3 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
140	CO3-2	5.253E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	4.561E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.602E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	9.950E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.092E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	1.218E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	2.139E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	1.173E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	1.440E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	6.061E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.197E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	6.742E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.477E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.792E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	2.428E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	9.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 7.809E-03 Sum of ANIONS 5.182E-03

PERCENT DIFFERENCE = 2.023E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

NON-CARBONATE ALKALINITY = -3.573E-06

EQUILIBRIUM IONIC STRENGTH (m) = 9.132E-03

EQUILIBRIUM pH = 5.490

DATE ID NUMBER: 930225
TIME ID NUMBER: 14233610

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
2003000	ALOH3(A)	-3.474	[1.000] 30 [3.000] 2 [-3.000] 330
6003000	ALOHSO4	-3.708	[-1.000] 330 [1.000] 30 [1.000] 732
			[1.000] 2
6003001	AL4(OH)10SO4	-8.920	[-10.000] 330 [4.000] 30 [1.000] 732
			[10.000] 2
6041000	ALUM K	-13.971	[1.000] 410 [1.000] 30 [2.000] 732
			[12.000] 2
6041001	ALUNITE	-3.982	[1.000] 410 [3.000] 30 [2.000] 732
			[6.000] 2 [-6.000] 330
6015000	ANHYDRITE	-1.770	[1.000] 150 [1.000] 732
5015000	ARAGONITE	-3.249	[1.000] 150 [1.000] 140
5046000	ARTINITE	-15.008	[-2.000] 330 [2.000] 460 [1.000] 140
			[5.000] 2
2003001	BOEHMITE	-1.672	[-3.000] 330 [1.000] 30 [2.000] 2
2046000	BRUCITE	-9.985	[1.000] 460 [2.000] 2 [-2.000] 330
5015001	CALCITE	-3.110	[1.000] 150 [1.000] 140
2003002	DIASPORE	0.033	[-3.000] 330 [1.000] 30 [2.000] 2
5015002	DOLOMITE	-6.800	[1.000] 150 [1.000] 460 [2.000] 140
6046000	EPSOMITE	-4.897	[1.000] 460 [1.000] 732 [7.000] 2
2028100	FERRIHYDRITE	1.304	[-3.000] 330 [1.000] 281 [3.000] 2
4128100	FEOH)2.7CL.3	6.451	[-2.700] 330 [1.000] 281 [2.700] 2
			[0.300] 180
6028100	FE2(SO4)3	-32.722	[2.000] 281 [3.000] 732
7015003	HYDRAPATITE	-12.440	[5.000] 150 [3.000] 580 [1.000] 2
			[-1.000] 330
7015002	FCO3APATITE	-12.287	[9.496] 150 [0.360] 500 [0.144] 460
			[4.800] 580 [1.200] 140 [2.480] 270
4215000	FLUORITE	-1.405	[1.000] 150 [2.000] 270
2003003	GIBBSITE (C)	-1.864	[-3.000] 330 [1.000] 30 [3.000] 2
3003000	AL2O3	-9.168	[2.000] 30 [3.000] 2 [-6.000] 330
2028102	GOETHITE	5.695	[-3.000] 330 [1.000] 281 [2.000] 2
6015001	GYPSUM	-1.559	[1.000] 150 [1.000] 732 [2.000] 2
4150000	HALITE	-7.607	[1.000] 500 [1.000] 180
3028100	HEMATITE	16.398	[-6.000] 330 [2.000] 281 [3.000] 2
5015003	HUNTITE	-18.261	[3.000] 460 [1.000] 150 [4.000] 140
5046001	HYDRMAGNESIT	-33.286	[5.000] 460 [4.000] 140 [-2.000] 330
			[6.000] 2
6050000	JAROSITE NA	5.352	[-6.000] 330 [1.000] 500 [3.000] 281
			[2.000] 732 [6.000] 2
6041002	JAROSITE K	7.338	[-6.000] 330 [1.000] 410 [3.000] 281
			[2.000] 732 [6.000] 2
6028101	JAROSITE H	2.996	[-5.000] 330 [3.000] 281 [2.000] 732
			[7.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
3028101	MAGHEMITE	6.004	[-6.000]	330	[2.000]	281	[3.000]	2				
5046002	MAGNESITE	-4.186	[1.000]	460	[1.000]	140						
6050001	MIRABILITE	-6.220	[2.000]	500	[1.000]	732	[10.000]	2				
3050000	NATRON	-11.201	[2.000]	500	[1.000]	140	[10.000]	2				
5046003	NESQUEHONITE	-6.594	[1.000]	460	[1.000]	140	[3.000]	2				
7028100	STRENGITE	1.320	[1.000]	281	[1.000]	580	[2.000]	2				
6050002	THENARDITE	-7.154	[2.000]	500	[1.000]	732						
5050001	THERMONATR	-12.637	[2.000]	500	[1.000]	140	[1.000]	2				
2047003	PYROCROITE	-9.194	[-2.000]	330	[1.000]	470	[2.000]	2				
5047000	RHODOCHROSIT	-2.718	[1.000]	470	[1.000]	140						
4147000	MNCL2, 4H2O	-15.376	[1.000]	470	[2.000]	180	[4.000]	2				
6047000	MNSO4	-10.618	[1.000]	470	[1.000]	732						
7047000	MN3(PO4)2	-21.039	[3.000]	470	[2.000]	580						
4123100	MELANOTHALLI	-16.645	[1.000]	231	[2.000]	180						
5023100	CUCO3	-3.747	[1.000]	231	[1.000]	140						
4223100	CUF2	-13.526	[1.000]	231	[2.000]	270						
4223101	CUF2, 2H2O	-9.596	[1.000]	231	[2.000]	270	[2.000]	2				
2023100	CU(OH)2	-2.995	[-2.000]	330	[1.000]	231	[2.000]	2				
4123101	ATACAMITE	-5.330	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	180								
5123100	CU2(OH)3NO3	-7.351	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	492								
6023100	ANTLERITE	-5.198	[-4.000]	330	[3.000]	231	[4.000]	2				
			[1.000]	732								
6023101	BROCHANTITE	-6.603	[-6.000]	330	[4.000]	231	[6.000]	2				
			[1.000]	732								
6023102	LANGITE	-8.053	[-6.000]	330	[4.000]	231	[7.000]	2				
			[1.000]	732								
2023101	TENORITE	-1.975	[-2.000]	330	[1.000]	231	[1.000]	2				
6023103	CUOCUSO4	-14.083	[-2.000]	330	[2.000]	231	[1.000]	2				
			[1.000]	732								
7023100	CU3(PO4)2	-8.763	[3.000]	231	[2.000]	580						
7023101	CU3(PO4)2,3W	-10.494	[3.000]	231	[2.000]	580	[3.000]	2				
6023104	CUSO4	-11.209	[1.000]	231	[1.000]	732						
6023105	CHALCANTHITE	-5.559	[1.000]	231	[1.000]	732	[5.000]	2				
3023100	CUPRICFERIT	12.155	[-8.000]	330	[1.000]	231	[2.000]	281				
			[4.000]	2								
4195000	ZNCL2	-19.107	[1.000]	950	[2.000]	180						
5095000	SMITHSONITE	-2.539	[1.000]	950	[1.000]	140						
5095001	ZNCO3, 1H2O	-2.279	[1.000]	950	[1.000]	140	[1.000]	2				
4295000	ZNF2	-11.788	[1.000]	950	[2.000]	270						
2095000	ZN(OH)2 (A)	-5.967	[-2.000]	330	[1.000]	950	[2.000]	2				
2095001	ZN(OH)2 (C)	-5.717	[-2.000]	330	[1.000]	950	[2.000]	2				
2095002	ZN(OH)2 (B)	-5.267	[-2.000]	330	[1.000]	950	[2.000]	2				
2095003	ZN(OH)2 (G)	-5.227	[-2.000]	330	[1.000]	950	[2.000]	2				
2095004	ZN(OH)2 (E)	-5.017	[-2.000]	330	[1.000]	950	[2.000]	2				
4195001	ZN2(OH)3CL	-11.514	[-3.000]	330	[2.000]	950	[3.000]	2				
			[1.000]	180								
4195002	ZN5(OH)8CL2	-24.645	[-8.000]	330	[5.000]	950	[8.000]	2				
			[2.000]	180								
6095000	ZN2(OH)2SO4	-8.377	[-2.000]	330	[2.000]	950	[2.000]	2				
			[1.000]	732								

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
6095001	ZN4(OH)6SO4	-16.311	[-6.000] 330 [4.000] 950 [6.000] 2 [1.000] 732
5195000	ZNNO3)2,6H2O	-15.759	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-4.827	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-4.657	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-27.258	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-11.060	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-10.371	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-6.791	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-5.596	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-5.401	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	-1.398	[1.000] 160 [1.000] 140
4116000	CDCL2	-13.996	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-12.966	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-12.736	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-12.927	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-9.846	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-9.766	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-8.916	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-24.751	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-22.744	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-26.706	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-11.236	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-18.296	[3.000] 160 [2.000] 580
6016003	CDSO4	-9.859	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-8.302	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-8.087	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-9.951	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-5.906	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-10.094	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-2.053	[1.000] 600 [1.000] 140
4260000	PBF2	-8.512	[1.000] 600 [2.000] 270
2060000	MASSICOT	-9.071	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-8.881	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-9.141	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-10.843	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-5.885	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-12.726	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-20.586	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	0.523	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-11.836	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5060002	PB3O2CO3	-18.524	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2
7060003	PLUMBGUMMITE	-5.202	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-18.061	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-8.161	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-2.214	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-4.311	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-6.064	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-10.395	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-9.066	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-18.521	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-19.586	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-2.552	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-4.189	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
7047001	MNHPO4(C)	0.020	[1.000] 470 [1.000] 580 [1.000] 330
7060006	PBHPO4	-3.535	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-6.531	[3.000] 600 [2.000] 580
2015000	LIME	-25.360	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-15.238	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-14.703	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-15.714	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	2.432	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-11.211	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	4.824	[-3.000] 330 [1.000] 281 [2.000] 2

Sample 9021c40 - Aqueous speciation at fixed pH; no solids allowed

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Temperature (Celsius): 25.00
Units of concentration: MG/L
Ionic strength to be computed.
Carbonate concentration represents carbonate alkalinity.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 200
The method used to compute activity coefficients is: Davies equation
Intermediate output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.738E-07	-6.760	0.000E-01
30	Al+3	1.000E-02	-2.000	1.160E-01
160	Cd+2	1.000E-01	-1.000	1.080E+00
231	Cu+2	1.000E+00	0.000	1.780E+01
150	Ca+2	1.000E+01	1.000	5.420E+02
281	Fe+3	1.000E-02	-2.000	1.590E-01
600	Pb+2	1.000E-02	-2.000	1.930E-01
460	Mg+2	1.000E+01	1.000	3.450E+02
470	Mn+2	1.000E+01	1.000	3.920E+02
410	K+1	1.000E+00	0.000	3.130E+01
500	Na+1	1.000E+01	1.000	2.050E+02
950	Zn+2	1.000E+01	1.000	3.710E+02
732	SO4-2	1.000E+02	2.000	2.850E+03
580	PO4-3	1.000E-03	-3.000	6.400E-02
492	NO3-1	1.000E+00	0.000	8.700E+01
270	F-1	1.000E-01	-1.000	3.160E+00
180	Cl-1	1.000E+00	0.000	3.650E+01
140	CO3-2	1.023E-07	-6.990	3.189E+01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 9.182E-02 Sum of ANIONS = 6.331E-02

PERCENT DIFFERENCE = 1.838E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

CO3-2	2.6	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	2.1	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	2.0	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +
	3.0	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	1.3	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +
	8.9	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	3.1	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ
	59.2	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	17.6	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
Al+3	1.8	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	7.3	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	1.4	PERCENT BOUND IN SPECIES # 302700	AlF +2
	33.1	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	44.0	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	2.7	PERCENT BOUND IN SPECIES # 302703	AlF4 -
	9.6	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
Cd+2	54.5	PERCENT BOUND IN SPECIES # 160	Cd+2
	1.9	PERCENT BOUND IN SPECIES #1601800	CdCl +
	34.5	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	1.7	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +
	6.6	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2
Cu+2	44.2	PERCENT BOUND IN SPECIES # 231	Cu+2
	12.6	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	1.2	PERCENT BOUND IN SPECIES #2313300	CuOH +
	10.9	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
	5.8	PERCENT BOUND IN SPECIES #2313304	Cu2(OH)2+2
	19.8	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
	5.4	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +
Ca+2	68.9	PERCENT BOUND IN SPECIES # 150	Ca+2
	30.8	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
Fe+3	94.7	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	4.9	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
Pb+2	28.2	PERCENT BOUND IN SPECIES # 600	Pb+2
	1.5	PERCENT BOUND IN SPECIES #6003300	PbOH +
	34.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ
	26.1	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ
	3.2	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2
	5.4	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +
Mg+2	71.6	PERCENT BOUND IN SPECIES # 460	Mg+2
	28.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Mn+2	71.1	PERCENT BOUND IN SPECIES # 470	Mn+2
	28.4	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
K+1	95.8	PERCENT BOUND IN SPECIES # 410	K+1
	4.2	PERCENT BOUND IN SPECIES #4107320	KSO4 -
Na+1	97.0	PERCENT BOUND IN SPECIES # 500	Na+1

	3.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Zn+2	61.2	PERCENT BOUND IN SPECIES # 950	Zn+2
	31.5	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	4.4	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
	1.9	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
SO4-2	56.8	PERCENT BOUND IN SPECIES # 732	SO4-2
	13.4	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
	14.1	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
	6.8	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
	6.0	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	1.7	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
PO4-3	30.7	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	3.7	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +
	23.2	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ
	15.6	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ
	2.7	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +
	23.4	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
F-1	72.3	PERCENT BOUND IN SPECIES # 270	F-1
	17.8	PERCENT BOUND IN SPECIES #4602700	MgF +
	2.1	PERCENT BOUND IN SPECIES #1502700	CaF +
	1.7	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	3.4	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	1.3	PERCENT BOUND IN SPECIES #9502700	ZnF +
Cl-1	98.9	PERCENT BOUND IN SPECIES # 180	Cl-1
H2O	1.2	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	1.2	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
	5.3	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	3.3	PERCENT BOUND IN SPECIES #2313300	CuOH +
	60.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
	16.1	PERCENT BOUND IN SPECIES #2313304	Cu2(OH)2+2
	10.2	PERCENT BOUND IN SPECIES #9503300	ZnOH +
	1.0	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ
H+1	2.5	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	2.0	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	2.0	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +
	1.2	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +
	8.6	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	57.5	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	34.1	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
140	CO3-2	1.204E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	4.320E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	9.656E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.815E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	1.359E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	2.861E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	9.361E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	1.426E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	7.170E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.044E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.961E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	5.703E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.981E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	6.772E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.410E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	1.672E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.035E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	1.014E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	1.240E-03	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 6.635E-02 Sum of ANIONS 3.794E-02

PERCENT DIFFERENCE = 2.724E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

NON-CARBONATE ALKALINITY = -1.430E-07

EQUILIBRIUM IONIC STRENGTH (m) = 9.764E-02

EQUILIBRIUM pH = 6.760

DATE ID NUMBER: 930228
TIME ID NUMBER: 20554876

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
2003000	ALOH3(A)	-0.750	[1.000] 30 [3.000] 2 [-3.000] 330
6003000	ALOHSO4	-2.869	[-1.000] 330 [1.000] 30 [1.000] 732 [1.000] 2
6003001	AL4(OH)10SO4	0.089	[-10.000] 330 [4.000] 30 [1.000] 732 [10.000] 2
6041000	ALUM K	-13.129	[1.000] 410 [1.000] 30 [2.000] 732 [12.000] 2
6041001	ALUNITE	2.314	[1.000] 410 [3.000] 30 [2.000] 732 [6.000] 2 [-6.000] 330
6015000	ANHYDRITE	-0.040	[1.000] 150 [1.000] 732
5015000	ARAGONITE	-0.957	[1.000] 150 [1.000] 140
5046000	ARTINITE	-7.768	[-2.000] 330 [2.000] 460 [1.000] 140 [5.000] 2
2003001	BOEHMITE	1.052	[-3.000] 330 [1.000] 30 [2.000] 2
2046000	BRUCITE	-5.703	[1.000] 460 [2.000] 2 [-2.000] 330
5015001	CALCITE	-0.818	[1.000] 150 [1.000] 140
2003002	DIASPORE	2.757	[-3.000] 330 [1.000] 30 [2.000] 2
5015002	DOLOMITE	-1.549	[1.000] 150 [1.000] 460 [2.000] 140
6046000	EPSOMITE	-2.504	[1.000] 460 [1.000] 732 [7.000] 2
2028100	FERRIHYDRITE	1.861	[-3.000] 330 [1.000] 281 [3.000] 2
4128100	FEOH)2.7CL.3	6.835	[-2.700] 330 [1.000] 281 [2.700] 2 [0.300] 180
6028100	FE2(SO4)3	-37.261	[2.000] 281 [3.000] 732
7015003	HYDRAPATITE	0.148	[5.000] 150 [3.000] 580 [1.000] 2 [-1.000] 330
7015002	FCO3APATITE	10.102	[9.496] 150 [0.360] 500 [0.144] 460 [4.800] 580 [1.200] 140 [2.480] 270
4215000	FLUORITE	0.427	[1.000] 150 [2.000] 270
2003003	GIBBSITE (C)	0.860	[-3.000] 330 [1.000] 30 [3.000] 2
3003000	A12O3	-3.719	[2.000] 30 [3.000] 2 [-6.000] 330
2028102	GOETHITE	6.253	[-3.000] 330 [1.000] 281 [2.000] 2
6015001	GYPSUM	0.170	[1.000] 150 [1.000] 732 [2.000] 2
4150000	HALITE	-6.852	[1.000] 500 [1.000] 180
3028100	HEMATITE	17.515	[-6.000] 330 [2.000] 281 [3.000] 2
5015003	HUNTITE	-7.092	[3.000] 460 [1.000] 150 [4.000] 140
5046001	HYDRMAGNESIT	-17.170	[5.000] 460 [4.000] 140 [-2.000] 330 [6.000] 2
6050000	JAROSITE NA	4.589	[-6.000] 330 [1.000] 500 [3.000] 281 [2.000] 732 [6.000] 2
6041002	JAROSITE K	7.137	[-6.000] 330 [1.000] 410 [3.000] 281 [2.000] 732 [6.000] 2
6028101	JAROSITE H	0.899	[-5.000] 330 [3.000] 281 [2.000] 732 [7.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]								
3028101	MAGHEMITE	7.121	[-6.000]	330	[2.000]	281	[3.000]	2			
5046002	MAGNESITE	-1.227	[1.000]	460	[1.000]	140					
6050001	MIRABILITE	-5.443	[2.000]	500	[1.000]	732	[10.000]	2			
3050000	NATRON	-9.863	[2.000]	500	[1.000]	140	[10.000]	2			
5046003	NESQUEHONITE	-3.637	[1.000]	460	[1.000]	140	[3.000]	2			
7028100	STRENGITE	0.048	[1.000]	281	[1.000]	580	[2.000]	2			
6050002	THENARDITE	-6.372	[2.000]	500	[1.000]	732					
5050001	THERMONATR	-11.293	[2.000]	500	[1.000]	140	[1.000]	2			
2047003	PYROCROITE	-4.300	[-2.000]	330	[1.000]	470	[2.000]	2			
5047000	RHODOCHROSIT	0.853	[1.000]	470	[1.000]	140					
4147000	MNCL2, 4H2O	-11.643	[1.000]	470	[2.000]	180	[4.000]	2			
6047000	MNSO4	-7.610	[1.000]	470	[1.000]	732					
7047000	MN3(PO4)2	-10.017	[3.000]	470	[2.000]	580					
4123100	MELANOTHALLI	-14.273	[1.000]	231	[2.000]	180					
5023100	CUCO3	-1.540	[1.000]	231	[1.000]	140					
4223100	CUF2	-11.779	[1.000]	231	[2.000]	270					
4223101	CUF2, 2H2O	-7.850	[1.000]	231	[2.000]	270	[2.000]	2			
2023100	CU(OH)2	0.535	[-2.000]	330	[1.000]	231	[2.000]	2			
4123101	ATACAMITE	1.151	[-3.000]	330	[2.000]	231	[3.000]	2			
			[1.000]	180							
5123100	CU2(OH)3NO3	-0.609	[-3.000]	330	[2.000]	231	[3.000]	2			
			[1.000]	492							
6023100	ANTLERITE	3.507	[-4.000]	330	[3.000]	231	[4.000]	2			
			[1.000]	732							
6023101	BROCHANTITE	5.632	[-6.000]	330	[4.000]	231	[6.000]	2			
			[1.000]	732							
6023102	LANGITE	4.182	[-6.000]	330	[4.000]	231	[7.000]	2			
			[1.000]	732							
2023101	TENORITE	1.556	[-2.000]	330	[1.000]	231	[1.000]	2			
6023103	CUOCUSO4	-8.907	[-2.000]	330	[2.000]	231	[1.000]	2			
			[1.000]	732							
7023100	CU3(PO4)2	-1.831	[3.000]	231	[2.000]	580					
7023101	CU3(PO4)2,3W	-3.563	[3.000]	231	[2.000]	580	[3.000]	2			
6023104	CUSO4	-9.563	[1.000]	231	[1.000]	732					
6023105	CHALCANTHITE	-3.916	[1.000]	231	[1.000]	732	[5.000]	2			
3023100	CUPRICFERIT	16.803	[-8.000]	330	[1.000]	231	[2.000]	281			
			[4.000]	2							
4195000	ZNCL2	-16.125	[1.000]	950	[2.000]	180					
5095000	SMITHSONITE	0.278	[1.000]	950	[1.000]	140					
5095001	ZNCO3, 1H2O	0.538	[1.000]	950	[1.000]	140	[1.000]	2			
4295000	ZNF2	-9.431	[1.000]	950	[2.000]	270					
2095000	ZN(OH)2 (A)	-1.827	[-2.000]	330	[1.000]	950	[2.000]	2			
2095001	ZN(OH)2 (C)	-1.577	[-2.000]	330	[1.000]	950	[2.000]	2			
2095002	ZN(OH)2 (B)	-1.127	[-2.000]	330	[1.000]	950	[2.000]	2			
2095003	ZN(OH)2 (G)	-1.087	[-2.000]	330	[1.000]	950	[2.000]	2			
2095004	ZN(OH)2 (E)	-0.877	[-2.000]	330	[1.000]	950	[2.000]	2			
4195001	ZN2(OH)3CL	-3.813	[-3.000]	330	[2.000]	950	[3.000]	2			
			[1.000]	180							
4195002	ZN5(OH)8CL2	-5.102	[-8.000]	330	[5.000]	950	[8.000]	2			
			[2.000]	180							
6095000	ZN2(OH)2SO4	-1.982	[-2.000]	330	[2.000]	950	[2.000]	2			
			[1.000]	732							

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
6095001	ZN4(OH)6SO4	-1.636	[-6.000] 330 [4.000] 950 [6.000] 2 [1.000] 732
5195000	ZNNO3)2,6H2O	-12.260	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-0.686	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-0.516	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-18.607	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-2.300	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-8.115	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-4.536	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-3.344	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-3.150	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	1.196	[1.000] 160 [1.000] 140
4116000	CDCL2	-11.237	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-10.208	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-9.979	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-10.793	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-5.929	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-5.849	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-5.578	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-14.885	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-14.764	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-12.924	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-7.318	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-10.203	[3.000] 160 [2.000] 580
6016003	CDSO4	-7.827	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-6.271	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-6.056	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-8.446	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-4.714	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-7.248	[2.000] 600 [1.000] 180 [1.000] 140
5060000	CERRUSITE	-0.712	[1.000] 600 [1.000] 140
4260000	PBF2	-7.632	[1.000] 600 [2.000] 270
2060000	MASSICOT	-6.407	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-6.217	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-6.477	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-6.839	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-2.443	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-6.620	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-11.817	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	7.773	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-4.008	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5060002	PB3O2CO3	-11.856	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2
7060003	PLUMBGUMMITE	1.974	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-10.941	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-1.135	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-1.436	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-1.648	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-3.980	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-5.647	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-3.723	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-13.195	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-10.819	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	3.186	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	3.756	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
7047001	MNHPO4(C)	3.084	[1.000] 470 [1.000] 580 [1.000] 330
7060006	PBHPO4	-2.702	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-2.200	[3.000] 600 [2.000] 580
2015000	LIME	-21.745	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-11.623	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-10.420	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-5.982	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	7.832	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-9.836	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	5.382	[-3.000] 330 [1.000] 281 [2.000] 2

Sample 9207a90 - Aqueous speciation at fixed pH; no solids allowed

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Temperature (Celsius): 25.00
Units of concentration: MG/L
Ionic strength to be computed.
Carbonate concentration represents carbonate alkalinity.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Intermediate output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	2.042E-03	-2.690	0.000E-01
30	Al+3	2.138E-06	-5.670	2.170E+02
160	Cd+2	1.950E-08	-7.710	4.380E+00
231	Cu+2	1.479E-07	-6.830	1.020E+03
150	Ca+2	3.548E-03	-2.450	1.230E+02
281	Fe+3	5.495E-07	-6.260	1.740E+03
600	Pb+2	8.128E-09	-8.090	1.860E-02
460	Mg+2	8.511E-04	-3.070	5.910E+01
470	Mn+2	3.467E-08	-7.460	6.820E+02
410	K+1	1.778E-04	-3.750	3.460E-01
500	Na+1	5.248E-03	-2.280	2.060E+02
950	Zn+2	7.762E-06	-5.110	1.890E+03
61	H3AsO4	1.318E-07	-6.880	1.570E+02
732	SO4-2	5.370E-03	-2.270	1.000E+04
580	PO4-3	3.981E-06	-5.400	9.000E-02
492	NO3-1	9.772E-06	-5.010	4.000E+00
270	F-1	2.399E-04	-3.620	1.000E+01
180	Cl-1	1.288E-03	-2.890	2.800E+00
140	CO3-2	1.000E-16	-16.000	0.000E-01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 2.565E-01 Sum of ANIONS = 2.123E-01

PERCENT DIFFERENCE = 9.436E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	95.9	PERCENT BOUND IN SPECIES # 180	Cl-1
	1.2	PERCENT BOUND IN SPECIES #2811800 FeCl +2	
	1.2	PERCENT BOUND IN SPECIES #9501800 ZnCl +	
Al+3	36.1	PERCENT BOUND IN SPECIES # 30	Al+3
	5.6	PERCENT BOUND IN SPECIES # 302700 AlF +2	
	32.0	PERCENT BOUND IN SPECIES # 307320 AlSO4 +	
	26.3	PERCENT BOUND IN SPECIES # 307321 Al(SO4)2 -	
Cd+2	46.5	PERCENT BOUND IN SPECIES # 160	Cd+2
	37.7	PERCENT BOUND IN SPECIES #1607320 CdSO4 AQ	
	15.7	PERCENT BOUND IN SPECIES #1607321 Cd(SO4)2-2	
Cu+2	63.5	PERCENT BOUND IN SPECIES # 231	Cu+2
	36.5	PERCENT BOUND IN SPECIES #2317320 CuSO4 AQ	
Ca+2	63.6	PERCENT BOUND IN SPECIES # 150	Ca+2
	36.4	PERCENT BOUND IN SPECIES #1507320 CaSO4 AQ	
Fe+3	8.2	PERCENT BOUND IN SPECIES # 281	Fe+3
	5.4	PERCENT BOUND IN SPECIES #2813300 FeOH +2	
	58.1	PERCENT BOUND IN SPECIES #2817320 FeSO4 +	
	19.0	PERCENT BOUND IN SPECIES #2817321 Fe(SO4)2 -	
	6.2	PERCENT BOUND IN SPECIES #2813304 Fe2(OH)2+4	
	2.6	PERCENT BOUND IN SPECIES #2813305 Fe3(OH)4+5	
Pb+2	34.5	PERCENT BOUND IN SPECIES # 600	Pb+2
	54.6	PERCENT BOUND IN SPECIES #6007320 PbSO4 AQ	
	10.9	PERCENT BOUND IN SPECIES #6007321 Pb(SO4)2-2	
Mg+2	66.6	PERCENT BOUND IN SPECIES # 460	Mg+2
	33.4	PERCENT BOUND IN SPECIES #4607320 MgSO4 AQ	
Mn+2	66.1	PERCENT BOUND IN SPECIES # 470	Mn+2
	33.9	PERCENT BOUND IN SPECIES #4707320 MnSO4 AQ	
K+1	93.2	PERCENT BOUND IN SPECIES # 410	K+1
	6.8	PERCENT BOUND IN SPECIES #4107320 KSO4 -	
Na+1	95.1	PERCENT BOUND IN SPECIES # 500	Na+1
	4.9	PERCENT BOUND IN SPECIES #5007320 NaSO4 -	
Zn+2	53.7	PERCENT BOUND IN SPECIES # 950	Zn+2
	35.4	PERCENT BOUND IN SPECIES #9507320 ZnSO4 AQ	
	10.9	PERCENT BOUND IN SPECIES #9507321 Zn(SO4)2-2	
H3AsO4	19.9	PERCENT BOUND IN SPECIES # 61	H3AsO4
	80.1	PERCENT BOUND IN SPECIES #3300611 H2AsO4 -	
SO4-2	34.2	PERCENT BOUND IN SPECIES # 732	SO4-2
	1.1	PERCENT BOUND IN SPECIES #1507320 CaSO4 AQ	
	2.5	PERCENT BOUND IN SPECIES # 307320 AlSO4 +	
	4.1	PERCENT BOUND IN SPECIES # 307321 Al(SO4)2 -	
	17.4	PERCENT BOUND IN SPECIES #2817320 FeSO4 +	
	11.4	PERCENT BOUND IN SPECIES #2817321 Fe(SO4)2 -	

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                4.0     PERCENT BOUND IN SPECIES #4707320   MnSO4 AQ
                5.6     PERCENT BOUND IN SPECIES #2317320   CuSO4 AQ
                9.8     PERCENT BOUND IN SPECIES #9507320   ZnSO4 AQ
                6.1     PERCENT BOUND IN SPECIES #9507321   Zn(SO4)2-2
                2.7     PERCENT BOUND IN SPECIES #3307320   HSO4 -

PO4-3                   98.9     PERCENT BOUND IN SPECIES #2815801   FeH2PO4 +2

NO3-1                  100.0     PERCENT BOUND IN SPECIES #    492   NO3-1

F-1                     85.5     PERCENT BOUND IN SPECIES # 302700   AlF +2
              2.7     PERCENT BOUND IN SPECIES # 302701   AlF2 +
             11.7     PERCENT BOUND IN SPECIES #2812700   FeF +2

CO3-2                   99.9     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ

H+1                      3.6     PERCENT BOUND IN SPECIES # 303300   AlOH +2
           >1000.     PERCENT BOUND IN SPECIES #2813300   FeOH +2
            254.3     PERCENT BOUND IN SPECIES #2813301   FeOH2 +
           >1000.     PERCENT BOUND IN SPECIES #2813304   Fe2(OH)2+4
           >1000.     PERCENT BOUND IN SPECIES #2813305   Fe3(OH)4+5
           >1000.     PERCENT BOUND IN SPECIES #3300611   H2AsO4 -

H2O                     34.6     PERCENT BOUND IN SPECIES #2813300   FeOH +2
              4.4     PERCENT BOUND IN SPECIES #2813301   FeOH2 +
             39.2     PERCENT BOUND IN SPECIES #2813304   Fe2(OH)2+4
             21.8     PERCENT BOUND IN SPECIES #2813305   Fe3(OH)4+5
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
180	Cl-1	8.027E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	8.175E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	3.961E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	1.631E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	3.119E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	3.167E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	9.124E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	2.471E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	1.262E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.994E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	9.107E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	2.939E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.124E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	1.058E-01	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	9.632E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	6.557E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.350E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	9.441E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	-8.550E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	4.972E-03	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.352E-01 Sum of ANIONS 9.126E-02

PERCENT DIFFERENCE = 1.941E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

NON-CARBONATE ALKALINITY = -2.792E-03

EQUILIBRIUM IONIC STRENGTH (m) = 2.182E-01

EQUILIBRIUM pH = 2.690

DATE ID NUMBER: 930122
TIME ID NUMBER: 15473425

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
2003000	ALOH3(A)	-6.069	[1.000]	30	[3.000]	2	[-3.000]	330		
6003000	ALOHSO4	0.179	[-1.000]	330	[1.000]	30	[1.000]	732		
			[1.000]	2						
6003001	AL4(OH)10SO4	-12.816	[-10.000]	330	[4.000]	30	[1.000]	732		
			[10.000]	2						
6041000	ALUM K	-7.786	[1.000]	410	[1.000]	30	[2.000]	732		
			[12.000]	2						
6041001	ALUNITE	-2.968	[1.000]	410	[3.000]	30	[2.000]	732		
			[6.000]	2	[-6.000]	330				
6015000	ANHYDRITE	-0.595	[1.000]	150	[1.000]	732				
5015000	ARAGONITE	-10.215	[1.000]	150	[1.000]	140				
5046000	ARTINITE	-26.187	[-2.000]	330	[2.000]	460	[1.000]	140		
			[5.000]	2						
2003001	BOEHMITE	-4.265	[-3.000]	330	[1.000]	30	[2.000]	2		
2046000	BRUCITE	-14.742	[1.000]	460	[2.000]	2	[-2.000]	330		
5015001	CALCITE	-10.076	[1.000]	150	[1.000]	140				
2003002	DIASPORE	-2.560	[-3.000]	330	[1.000]	30	[2.000]	2		
5015002	DOLOMITE	-20.182	[1.000]	150	[1.000]	460	[2.000]	140		
6046000	EPSOMITE	-3.184	[1.000]	460	[1.000]	732	[7.000]	2		
2028100	FERRIHYDRITE	-0.632	[-3.000]	330	[1.000]	281	[3.000]	2		
4128100	FEOH)2.7CL.3	5.218	[-2.700]	330	[1.000]	281	[2.700]	2		
			[0.300]	180						
6028100	FE2(SO4)3	-17.148	[2.000]	281	[3.000]	732				
7015003	HYDRAPATITE	-36.420	[5.000]	150	[3.000]	580	[1.000]	2		
			[-1.000]	330						
7015002	FCO3APATITE	-61.091	[9.496]	150	[0.360]	500	[0.144]	460		
			[4.800]	580	[1.200]	140	[2.480]	270		
4215000	FLUORITE	-6.576	[1.000]	150	[2.000]	270				
2003003	GIBBSITE (C)	-4.459	[-3.000]	330	[1.000]	30	[3.000]	2		
3003000	A12O3	-14.352	[2.000]	30	[3.000]	2	[-6.000]	330		
2028102	GOETHITE	3.760	[-3.000]	330	[1.000]	281	[2.000]	2		
6015001	GYPSUM	-0.387	[1.000]	150	[1.000]	732	[2.000]	2		
4150000	HALITE	-8.030	[1.000]	500	[1.000]	180				
3028100	HEMATITE	12.531	[-6.000]	330	[2.000]	281	[3.000]	2		
5015003	HUNTITE	-44.478	[3.000]	460	[1.000]	150	[4.000]	140		
5046001	HYDRMAGNESIT	-63.717	[5.000]	460	[4.000]	140	[-2.000]	330		
			[6.000]	2						
6050000	JAROSITE NA	9.743	[-6.000]	330	[1.000]	500	[3.000]	281		
			[2.000]	732	[6.000]	2				
6041002	JAROSITE K	10.329	[-6.000]	330	[1.000]	410	[3.000]	281		
			[2.000]	732	[6.000]	2				
6028101	JAROSITE H	10.149	[-5.000]	330	[3.000]	281	[2.000]	732		
			[7.000]	2						

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
3028101	MAGHEMITE	2.137	[-6.000] 330 [2.000] 281 [3.000] 2
5046002	MAGNESITE	-10.603	[1.000] 460 [1.000] 140
6050001	MIRABILITE	-5.285	[2.000] 500 [1.000] 732 [10.000] 2
3050000	NATRON	-18.407	[2.000] 500 [1.000] 140 [10.000] 2
5046003	NESQUEHONITE	-13.015	[1.000] 460 [1.000] 140 [3.000] 2
7028100	STRENGITE	0.232	[1.000] 281 [1.000] 580 [2.000] 2
6050002	THENARDITE	-6.203	[2.000] 500 [1.000] 732
5050001	THERMONATR	-19.828	[2.000] 500 [1.000] 140 [1.000] 2
2047003	PYROCROITE	-12.334	[-2.000] 330 [1.000] 470 [2.000] 2
5047000	RHODOCHROSIT	-7.517	[1.000] 470 [1.000] 140
4147000	MNCL2, 4H2O	-13.838	[1.000] 470 [2.000] 180 [4.000] 2
6047000	MNSO4	-7.276	[1.000] 470 [1.000] 732
7047000	MN3(PO4)2	-28.757	[3.000] 470 [2.000] 580
4123100	MELANOTHALLI	-14.757	[1.000] 231 [2.000] 180
5023100	CUCO3	-8.203	[1.000] 231 [1.000] 140
4223100	CUF2	-16.187	[1.000] 231 [2.000] 270
4223101	CUF2, 2H2O	-12.260	[1.000] 231 [2.000] 270 [2.000] 2
2023100	CU(OH)2	-5.792	[-2.000] 330 [1.000] 231 [2.000] 2
4123101	ATACAMITE	-8.581	[-3.000] 330 [2.000] 231 [3.000] 2 [1.000] 180
5123100	CU2(OH)3NO3	-10.551	[-3.000] 330 [2.000] 231 [3.000] 2 [1.000] 492
6023100	ANTLERITE	-7.106	[-4.000] 330 [3.000] 231 [4.000] 2 [1.000] 732
6023101	BROCHANTITE	-11.308	[-6.000] 330 [4.000] 231 [6.000] 2 [1.000] 732
6023102	LANGITE	-12.760	[-6.000] 330 [4.000] 231 [7.000] 2 [1.000] 732
2023101	TENORITE	-4.770	[-2.000] 330 [1.000] 231 [1.000] 2
6023103	CUOCUSO4	-13.193	[-2.000] 330 [2.000] 231 [1.000] 2 [1.000] 732
7023100	CU3(PO4)2	-15.452	[3.000] 231 [2.000] 580
7023101	CU3(PO4)2,3W	-17.187	[3.000] 231 [2.000] 580 [3.000] 2
6023104	CUSO4	-7.523	[1.000] 231 [1.000] 732
6023105	CHALCANTHITE	-1.882	[1.000] 231 [1.000] 732 [5.000] 2
3023100	CUPRICFERIT	5.493	[-8.000] 330 [1.000] 231 [2.000] 281 [4.000] 2
4195000	ZNCL2	-17.875	[1.000] 950 [2.000] 180
5095000	SMITHSONITE	-7.650	[1.000] 950 [1.000] 140
5095001	ZNCO3, 1H2O	-7.392	[1.000] 950 [1.000] 140 [1.000] 2
4295000	ZNF2	-15.105	[1.000] 950 [2.000] 270
2095000	ZN(OH)2 (A)	-9.419	[-2.000] 330 [1.000] 950 [2.000] 2
2095001	ZN(OH)2 (C)	-9.169	[-2.000] 330 [1.000] 950 [2.000] 2
2095002	ZN(OH)2 (B)	-8.719	[-2.000] 330 [1.000] 950 [2.000] 2
2095003	ZN(OH)2 (G)	-8.679	[-2.000] 330 [1.000] 950 [2.000] 2
2095004	ZN(OH)2 (E)	-8.469	[-2.000] 330 [1.000] 950 [2.000] 2
4195001	ZN2(OH)3CL	-16.076	[-3.000] 330 [2.000] 950 [3.000] 2 [1.000] 180
4195002	ZN5(OH)8CL2	-37.221	[-8.000] 330 [5.000] 950 [8.000] 2 [2.000] 180
6095000	ZN2(OH)2SO4	-8.800	[-2.000] 330 [2.000] 950 [2.000] 2 [1.000] 732

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
6095001	ZN4(OH)6SO4	-23.639	[-6.000]	330	[4.000]	950	[6.000]	2	[1.000]	732		
5195000	ZNNO3)2,6H2O	-14.434	[1.000]	950	[2.000]	492	[6.000]	2				
2095005	ZNO(ACTIVE)	-8.278	[-2.000]	330	[1.000]	950	[1.000]	2				
2095006	ZINCITE	-8.108	[-2.000]	330	[1.000]	950	[1.000]	2				
6095002	ZN3O(SO4)2	-24.650	[-2.000]	330	[3.000]	950	[2.000]	732	[1.000]	2		
7095000	ZN3(PO4),4W	-19.721	[3.000]	950	[2.000]	580	[4.000]	2				
6095003	ZINCOSITE	-7.341	[1.000]	950	[1.000]	732						
6095004	ZNSO4, 1H2O	-3.763	[1.000]	950	[1.000]	732	[1.000]	2				
6095005	BIANCHITE	-2.576	[1.000]	950	[1.000]	732	[6.000]	2				
6095006	GOSLARITE	-2.383	[1.000]	950	[1.000]	732	[7.000]	2				
5016000	OTAVITE	-6.843	[1.000]	160	[1.000]	140						
4116000	CDCL2	-13.097	[1.000]	160	[2.000]	180						
4116001	CDCL2, 1H2O	-12.069	[1.000]	160	[2.000]	180	[1.000]	2				
4116002	CDCL2,2.5H2O	-11.842	[1.000]	160	[2.000]	180	[2.500]	2				
4216000	CDF2	-16.578	[1.000]	160	[2.000]	270						
2016000	CD(OH)2 (A)	-13.632	[-2.000]	330	[1.000]	160	[2.000]	2				
2016001	CD(OH)2 (C)	-13.552	[-2.000]	330	[1.000]	160	[2.000]	2				
4116003	CDOHCL	-10.360	[-1.000]	330	[1.000]	160	[1.000]	2	[1.000]	180		
6016000	CD3(OH)4SO4	-29.628	[-4.000]	330	[3.000]	160	[4.000]	2	[1.000]	732		
6016001	CD3OH2(SO4)2	-21.140	[-2.000]	330	[3.000]	160	[2.000]	2	[2.000]	732		
6016002	CD4(OH)6SO4	-35.370	[-6.000]	330	[4.000]	160	[6.000]	2	[1.000]	732		
2016002	MONTEPONITE	-15.020	[-2.000]	330	[1.000]	160	[1.000]	2				
7016000	CD3(PO4)2	-27.954	[3.000]	160	[2.000]	580						
6016003	CDSO4	-7.164	[1.000]	160	[1.000]	732						
6016004	CDSO4, 1H2O	-5.609	[1.000]	160	[1.000]	732	[1.000]	2				
6016005	CDSO4,2.7H2O	-5.395	[1.000]	160	[1.000]	732	[2.670]	2				
4160000	COTUNNITE	-11.774	[1.000]	600	[2.000]	180						
4160001	MATLOCKITE	-10.005	[1.000]	600	[1.000]	180	[1.000]	270				
4160002	PHOSGENITE	-20.085	[2.000]	600	[2.000]	180	[1.000]	140				
5060000	CERRUSITE	-10.220	[1.000]	600	[1.000]	140						
4260000	PBF2	-14.885	[1.000]	600	[2.000]	270						
2060000	MASSICOT	-15.577	[-2.000]	330	[1.000]	600	[1.000]	2				
2060001	LITHARGE	-15.387	[-2.000]	330	[1.000]	600	[1.000]	2				
2060002	PBO, .3H2O	-15.648	[-2.000]	330	[1.000]	600	[1.330]	2				
5060001	PB2OCO3	-25.518	[-2.000]	330	[2.000]	600	[1.000]	2	[1.000]	140		
6060000	LARNAKITE	-12.418	[-2.000]	330	[2.000]	600	[1.000]	732	[1.000]	2		
6060001	PB3O2SO4	-25.766	[-4.000]	330	[3.000]	600	[1.000]	732	[2.000]	2		
6060002	PB4O3SO4	-40.133	[-6.000]	330	[4.000]	600	[1.000]	732	[3.000]	2		
7060001	CLPYROMORPH	-27.124	[5.000]	600	[3.000]	580	[1.000]	180				
7060002	HXYPYROMORPH	-41.826	[-1.000]	330	[5.000]	600	[3.000]	580	[1.000]	2		

ID #	NAME	Sat. Index	Stoichiometry in [brackets]											
5060002	PB3O2CO3	-39.705	[-4.000]	330	[3.000]	600	[1.000]	140	[2.000]	2				
7060003	PLUMBGUMMITE	-17.794	[-5.000]	330	[1.000]	600	[3.000]	30	[2.000]	580	[6.000]	2		
7060004	HINSDALITE	-25.021	[-6.000]	330	[1.000]	600	[3.000]	30	[1.000]	580	[1.000]	732	[6.000]	2
7060005	TSUMEBITE	-23.128	[-3.000]	330	[2.000]	600	[1.000]	231	[1.000]	580	[6.000]	2		
6060003	ANGLESITE	-2.241	[1.000]	600	[1.000]	732								
2060004	PB(OH)2 (C)	-10.819	[-2.000]	330	[1.000]	600	[2.000]	2						
4160003	LAURIONITE	-10.230	[-1.000]	330	[1.000]	600	[1.000]	180	[1.000]	2				
4160004	PB2(OH)3CL	-21.069	[-3.000]	330	[2.000]	600	[3.000]	2	[1.000]	180				
5060003	HYDCERRUSITE	-31.910	[-2.000]	330	[3.000]	600	[2.000]	140	[2.000]	2				
2060005	PB2O(OH)2	-31.536	[-4.000]	330	[2.000]	600	[3.000]	2						
6060004	PB4(OH)6SO4	-39.138	[-6.000]	330	[4.000]	600	[1.000]	732	[6.000]	2				
5023101	MALACHITE	-9.804	[2.000]	231	[2.000]	2	[1.000]	140	[-2.000]	330				
5023102	AZURITE	-15.897	[3.000]	231	[2.000]	2	[2.000]	140	[-2.000]	330				
3006100	AS2O5	-13.951	[2.000]	61	[-3.000]	2								
7047001	MNHPO4(C)	-2.271	[1.000]	470	[1.000]	580	[1.000]	330						
7060006	PBHPO4	-9.194	[1.000]	600	[1.000]	580	[1.000]	330						
7060007	PB3(PO4)2	-24.355	[3.000]	600	[2.000]	580								
7203000	ALASO4.2W	-4.115	[1.000]	30	[1.000]	61	[2.000]	2	[-3.000]	330				
7215000	CA3(ASO4)26W	-23.163	[3.000]	150	[2.000]	61	[4.000]	2	[-6.000]	330				
7223100	CU3(ASO4)26W	-4.805	[3.000]	231	[2.000]	61	[2.000]	2	[-6.000]	330				
7228100	FEASO4.2W	0.232	[1.000]	281	[1.000]	61	[2.000]	2	[-3.000]	330				
7247000	MN3ASO428W	-11.497	[3.000]	470	[2.000]	61	[8.000]	2	[-6.000]	330				
7260000	PB3(ASO4)2	-21.054	[3.000]	600	[2.000]	61	[-6.000]	330						
7295000	ZN3ASO422.5W	-11.809	[3.000]	950	[2.000]	61	[2.500]	2	[-6.000]	330				
2015000	LIME	-30.665	[-2.000]	330	[1.000]	150	[1.000]	2						
2015001	PORTLANDITE	-20.545	[-2.000]	330	[1.000]	150	[2.000]	2						
2046001	PERICLASE	-19.459	[-2.000]	330	[1.000]	460	[1.000]	2						
3046000	SPINEL	-25.654	[-8.000]	330	[1.000]	460	[2.000]	30	[4.000]	2				
3046001	MAG-FERRITE	-6.191	[-8.000]	330	[1.000]	460	[2.000]	281	[4.000]	2				
4250000	CRYOLITE	-21.696	[1.000]	30	[3.000]	500	[6.000]	270						
3028102	LEPIDOCROCIT	2.889	[-3.000]	330	[1.000]	281	[2.000]	2						

PART 1 of OUTPUT FILE

PC MINTEQA2 v3.10 DATE OF CALCULATIONS: 22-JAN-93 TIME: 15:58:21

Sample 9221c90 - Aqueous speciation at fixed pH; no solids allowed

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Temperature (Celsius): 25.00
Units of concentration: MG/L
Ionic strength to be computed.
Carbonate concentration represents carbonate alkalinity.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 100
The method used to compute activity coefficients is: Davies equation
Intermediate output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	7.586E-08	-7.120	0.000E-01
30	Al+3	2.138E-06	-5.670	6.820E-02
160	Cd+2	1.950E-08	-7.710	5.000E-03
231	Cu+2	1.479E-07	-6.830	2.390E-01
150	Ca+2	3.548E-03	-2.450	5.170E+02
281	Fe+3	5.495E-07	-6.260	7.460E-02
600	Pb+2	8.128E-09	-8.090	1.000E-03
460	Mg+2	8.511E-04	-3.070	1.350E+02
470	Mn+2	3.467E-08	-7.460	1.800E-01
410	K+1	1.778E-04	-3.750	2.500E+01
500	Na+1	5.248E-03	-2.280	1.790E+02
950	Zn+2	7.762E-06	-5.110	4.130E+00
61	H3AsO4	1.318E-07	-6.880	4.400E-03
732	SO4-2	5.370E-03	-2.270	1.900E+03
580	PO4-3	3.981E-06	-5.400	1.100E-01
492	NO3-1	9.772E-06	-5.010	3.600E+01
270	F-1	2.399E-04	-3.620	1.500E+00
180	Cl-1	1.288E-03	-2.890	3.200E+01
140	CO3-2	2.138E-06	-5.670	1.421E+02
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 4.562E-02 Sum of ANIONS = 4.600E-02

PERCENT DIFFERENCE = 4.138E-01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

CO3-2	1.6	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
3.1	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +	
83.1	PERCENT BOUND IN SPECIES #3301400	HCO3 -	
11.3	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	
Al+3	2.6	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
56.7	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
3.3	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
2.7	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ	
34.3	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
Cd+2	43.4	PERCENT BOUND IN SPECIES # 160	Cd+2
1.6	PERCENT BOUND IN SPECIES #1601800	CdCl +	
30.6	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
9.6	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +	
10.1	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ	
4.6	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	11.1	PERCENT BOUND IN SPECIES # 231	Cu+2
55.3	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ	
16.9	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
5.6	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
9.8	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +	
Ca+2	65.9	PERCENT BOUND IN SPECIES # 150	Ca+2
1.3	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +	
32.7	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Fe+3	87.4	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
10.8	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ	
1.8	PERCENT BOUND IN SPECIES #2813303	FeOH4 -	
Pb+2	4.9	PERCENT BOUND IN SPECIES # 600	Pb+2
1.0	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2	
6.8	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
79.1	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ	
6.9	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +	
Mg+2	68.6	PERCENT BOUND IN SPECIES # 460	Mg+2
1.5	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +	
29.7	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+2	67.5	PERCENT BOUND IN SPECIES # 470	Mn+2
30.0	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
2.4	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +	
K+1	96.1	PERCENT BOUND IN SPECIES # 410	K+1
3.9	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
Na+1	97.0	PERCENT BOUND IN SPECIES # 500	Na+1
2.8	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	48.2	PERCENT BOUND IN SPECIES # 950	Zn+2
27.6	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
3.1	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	

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                10.7     PERCENT BOUND IN SPECIES #9501400   ZnHCO3 +
                 8.9     PERCENT BOUND IN SPECIES #9501401   ZnCO3 AQ
                 1.0     PERCENT BOUND IN SPECIES #9501402   Zn(CO3)2-2

H3AsO4                     18.6     PERCENT BOUND IN SPECIES #3300611   H2AsO4 -
               81.4      PERCENT BOUND IN SPECIES #3300612   HAsO4 -2

SO4-2                      69.0     PERCENT BOUND IN SPECIES #    732   SO4-2
                 8.3     PERCENT BOUND IN SPECIES #4607320   MgSO4 AQ
                21.3     PERCENT BOUND IN SPECIES #1507320   CaSO4 AQ
                 1.1     PERCENT BOUND IN SPECIES #5007320   NaSO4 -

PO4-3                      20.5     PERCENT BOUND IN SPECIES #3305801   H2PO4 -
                 1.1     PERCENT BOUND IN SPECIES #4605801   MgH2PO4 +
                16.2     PERCENT BOUND IN SPECIES #4605802   MgHPO4 AQ
                26.5     PERCENT BOUND IN SPECIES #1505800   CaHPO4 AQ
                 1.0     PERCENT BOUND IN SPECIES #1505801   CaPO4 -
                 1.9     PERCENT BOUND IN SPECIES #1505802   CaH2PO4 +
                31.9     PERCENT BOUND IN SPECIES #3305800   HPO4 -2

NO3-1                     100.0     PERCENT BOUND IN SPECIES #    492   NO3-1

F-1                        87.3     PERCENT BOUND IN SPECIES #    270   F-1
                 9.4     PERCENT BOUND IN SPECIES #4602700   MgF +
                 2.8     PERCENT BOUND IN SPECIES #1502700   CaF +

Cl-1                      100.0     PERCENT BOUND IN SPECIES #    180   Cl-1

H2O                         1.2     PERCENT BOUND IN SPECIES #3300020   OH-
                43.6     PERCENT BOUND IN SPECIES # 303302   Al(OH)4 -
                19.8     PERCENT BOUND IN SPECIES # 303303   Al(OH)3 AQ
                17.8     PERCENT BOUND IN SPECIES #2813301   FeOH2 +
                 3.3     PERCENT BOUND IN SPECIES #2813302   FeOH3 AQ
                 9.7     PERCENT BOUND IN SPECIES #2313301   Cu(OH)2 AQ
                 1.8     PERCENT BOUND IN SPECIES #9503300   ZnOH +

H+1                         1.4     PERCENT BOUND IN SPECIES #4601401   MgHCO3 +
                 2.8     PERCENT BOUND IN SPECIES #1501400   CaHCO3 +
                75.2     PERCENT BOUND IN SPECIES #3301400   HCO3 -
                20.4     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
140	CO3-2	5.321E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	2.535E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	4.462E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	3.772E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	1.294E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	1.340E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.841E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	5.569E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	3.286E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	6.413E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	7.809E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	6.337E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	3.109E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	1.984E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	1.162E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	5.823E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	7.919E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	9.053E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	1.319E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	5.881E-03	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 3.321E-02 Sum of ANIONS 3.360E-02

PERCENT DIFFERENCE = 5.849E-01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

NON-CARBONATE ALKALINITY = 8.484E-08

EQUILIBRIUM IONIC STRENGTH (m) = 5.947E-02

EQUILIBRIUM pH = 7.120

DATE ID NUMBER: 930122
TIME ID NUMBER: 15584204

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
2003000	ALOH3(A)	-0.435	[1.000]	30	[3.000]	2	[-3.000]	330		
6003000	ALOHSO4	-3.299	[-1.000]	330	[1.000]	30	[1.000]	732		
			[1.000]	2						
6003001	AL4(OH)10SO4	0.606	[-10.000]	330	[4.000]	30	[1.000]	732		
			[10.000]	2						
6041000	ALUM K	-14.022	[1.000]	410	[1.000]	30	[2.000]	732		
			[12.000]	2						
6041001	ALUNITE	2.049	[1.000]	410	[3.000]	30	[2.000]	732		
			[6.000]	2	[-6.000]	330				
6015000	ANHYDRITE	-0.039	[1.000]	150	[1.000]	732				
5015000	ARAGONITE	0.238	[1.000]	150	[1.000]	140				
5046000	ARTINITE	-6.598	[-2.000]	330	[2.000]	460	[1.000]	140		
			[5.000]	2						
2003001	BOEHMITE	1.368	[-3.000]	330	[1.000]	30	[2.000]	2		
2046000	BRUCITE	-5.342	[1.000]	460	[2.000]	2	[-2.000]	330		
5015001	CALCITE	0.377	[1.000]	150	[1.000]	140				
2003002	DIASPORE	3.073	[-3.000]	330	[1.000]	30	[2.000]	2		
5015002	DOLOMITE	0.456	[1.000]	150	[1.000]	460	[2.000]	140		
6046000	EPSOMITE	-2.888	[1.000]	460	[1.000]	732	[7.000]	2		
2028100	FERRIHYDRITE	1.874	[-3.000]	330	[1.000]	281	[3.000]	2		
4128100	FEOH)2.7CL.3	6.729	[-2.700]	330	[1.000]	281	[2.700]	2		
			[0.300]	180						
6028100	FE2(SO4)3	-39.473	[2.000]	281	[3.000]	732				
7015003	HYDRAPATITE	3.027	[5.000]	150	[3.000]	580	[1.000]	2		
			[-1.000]	330						
7015002	FCO3APATITE	14.948	[9.496]	150	[0.360]	500	[0.144]	460		
			[4.800]	580	[1.200]	140	[2.480]	270		
4215000	FLUORITE	0.002	[1.000]	150	[2.000]	270				
2003003	GIBBSITE (C)	1.175	[-3.000]	330	[1.000]	30	[3.000]	2		
3003000	A12O3	-3.088	[2.000]	30	[3.000]	2	[-6.000]	330		
2028102	GOETHITE	6.266	[-3.000]	330	[1.000]	281	[2.000]	2		
6015001	GYPSUM	0.171	[1.000]	150	[1.000]	732	[2.000]	2		
4150000	HALITE	-6.932	[1.000]	500	[1.000]	180				
3028100	HEMATITE	17.540	[-6.000]	330	[2.000]	281	[3.000]	2		
5015003	HUNTITE	-3.468	[3.000]	460	[1.000]	150	[4.000]	140		
5046001	HYDRMAGNESIT	-13.571	[5.000]	460	[4.000]	140	[-2.000]	330		
			[6.000]	2						
6050000	JAROSITE NA	3.453	[-6.000]	330	[1.000]	500	[3.000]	281		
			[2.000]	732	[6.000]	2				
6041002	JAROSITE K	5.963	[-6.000]	330	[1.000]	410	[3.000]	281		
			[2.000]	732	[6.000]	2				
6028101	JAROSITE H	-0.554	[-5.000]	330	[3.000]	281	[2.000]	732		
			[7.000]	2						

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
3028101	MAGHEMITE	7.146	[-6.000] 330 [2.000] 281 [3.000] 2
5046002	MAGNESITE	-0.417	[1.000] 460 [1.000] 140
6050001	MIRABILITE	-5.552	[2.000] 500 [1.000] 732 [10.000] 2
3050000	NATRON	-8.776	[2.000] 500 [1.000] 140 [10.000] 2
5046003	NESQUEHONITE	-2.826	[1.000] 460 [1.000] 140 [3.000] 2
7028100	STRENGITE	-0.223	[1.000] 281 [1.000] 580 [2.000] 2
6050002	THENARDITE	-6.483	[2.000] 500 [1.000] 732
5050001	THERMONATR	-10.209	[2.000] 500 [1.000] 140 [1.000] 2
2047003	PYROCROITE	-6.874	[-2.000] 330 [1.000] 470 [2.000] 2
5047000	RHODOCHROSIT	-1.272	[1.000] 470 [1.000] 140
4147000	MNCL2, 4H2O	-15.009	[1.000] 470 [2.000] 180 [4.000] 2
6047000	MNSO4	-10.930	[1.000] 470 [1.000] 732
7047000	MN3(PO4)2	-18.307	[3.000] 470 [2.000] 580
4123100	MELANOTHALLI	-16.750	[1.000] 231 [2.000] 180
5023100	CUCO3	-2.774	[1.000] 231 [1.000] 140
4223100	CUF2	-14.634	[1.000] 231 [2.000] 270
4223101	CUF2, 2H2O	-10.705	[1.000] 231 [2.000] 270 [2.000] 2
2023100	CU(OH)2	-1.148	[-2.000] 330 [1.000] 231 [2.000] 2
4123101	ATACAMITE	-2.612	[-3.000] 330 [2.000] 231 [3.000] 2 [1.000] 180
5123100	CU2(OH)3NO3	-4.704	[-3.000] 330 [2.000] 231 [3.000] 2 [1.000] 492
6023100	ANTLERITE	-2.290	[-4.000] 330 [3.000] 231 [4.000] 2 [1.000] 732
6023101	BROCHANTITE	-1.848	[-6.000] 330 [4.000] 231 [6.000] 2 [1.000] 732
6023102	LANGITE	-3.298	[-6.000] 330 [4.000] 231 [7.000] 2 [1.000] 732
2023101	TENORITE	-0.128	[-2.000] 330 [1.000] 231 [1.000] 2
6023103	CUOCUSO4	-13.021	[-2.000] 330 [2.000] 231 [1.000] 2 [1.000] 732
7023100	CU3(PO4)2	-7.451	[3.000] 231 [2.000] 580
7023101	CU3(PO4)2,3W	-9.182	[3.000] 231 [2.000] 580 [3.000] 2
6023104	CUSO4	-11.993	[1.000] 231 [1.000] 732
6023105	CHALCANTHITE	-6.345	[1.000] 231 [1.000] 732 [5.000] 2
3023100	CUPRICFERIT	15.144	[-8.000] 330 [1.000] 231 [2.000] 281 [4.000] 2
4195000	ZNCL2	-18.188	[1.000] 950 [2.000] 180
5095000	SMITHSONITE	-0.543	[1.000] 950 [1.000] 140
5095001	ZNCO3, 1H2O	-0.283	[1.000] 950 [1.000] 140 [1.000] 2
4295000	ZNF2	-11.873	[1.000] 950 [2.000] 270
2095000	ZN(OH)2 (A)	-3.097	[-2.000] 330 [1.000] 950 [2.000] 2
2095001	ZN(OH)2 (C)	-2.847	[-2.000] 330 [1.000] 950 [2.000] 2
2095002	ZN(OH)2 (B)	-2.397	[-2.000] 330 [1.000] 950 [2.000] 2
2095003	ZN(OH)2 (G)	-2.357	[-2.000] 330 [1.000] 950 [2.000] 2
2095004	ZN(OH)2 (E)	-2.147	[-2.000] 330 [1.000] 950 [2.000] 2
4195001	ZN2(OH)3CL	-6.749	[-3.000] 330 [2.000] 950 [3.000] 2 [1.000] 180
4195002	ZN5(OH)8CL2	-12.246	[-8.000] 330 [5.000] 950 [8.000] 2 [2.000] 180
6095000	ZN2(OH)2SO4	-5.268	[-2.000] 330 [2.000] 950 [2.000] 2 [1.000] 732

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
6095001	ZN4(OH)6SO4	-7.462	[-6.000] 330 [4.000] 950 [6.000] 2 [1.000] 732
5195000	ZNNO3)2,6H2O	-14.984	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-1.956	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-1.786	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-23.909	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-6.678	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-10.131	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-6.552	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-5.359	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-5.164	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	-0.001	[1.000] 160 [1.000] 140
4116000	CDCL2	-13.676	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-12.647	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-12.417	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-13.610	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-7.575	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-7.495	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-7.620	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-20.569	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-21.194	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-20.254	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-8.964	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-15.710	[3.000] 160 [2.000] 580
6016003	CDSO4	-10.219	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-8.663	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-8.447	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-11.496	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-7.953	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-12.107	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-2.521	[1.000] 600 [1.000] 140
4260000	PBF2	-11.060	[1.000] 600 [2.000] 270
2060000	MASSICOT	-8.664	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-8.474	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-8.735	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-10.905	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-7.704	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-14.138	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-21.593	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	-4.763	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-16.148	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5060002	PB3O2CO3	-18.179	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2
7060003	PLUMBGUMMITE	0.095	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-13.282	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-7.617	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-4.439	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-3.905	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-6.633	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-10.558	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-9.596	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-17.709	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-20.594	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	0.267	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-0.397	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-33.112	[2.000] 61 [-3.000] 2
7047001	MNHPO4(C)	0.226	[1.000] 470 [1.000] 580 [1.000] 330
7060006	PBHPO4	-5.243	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-9.540	[3.000] 600 [2.000] 580
7203000	ALAsO4.2W	-8.062	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-13.319	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-10.038	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	-6.842	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7247000	MN3ASO428W	-14.273	[3.000] 470 [2.000] 61 [8.000] 2 [-6.000] 330
7260000	PB3(ASO4)2	-19.477	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-12.004	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-20.998	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-10.877	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-10.060	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-4.991	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	8.217	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-12.083	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	5.395	[-3.000] 330 [1.000] 281 [2.000] 2

Sample 9233c40 - Aqueous speciation at fixed pH; no solids allowed

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Temperature (Celsius): 25.00
Units of concentration: MG/L
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 200
The method used to compute activity coefficients is: Davies equation
Intermediate output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
30	Al+3	1.000E+00	0.000	3.160E+01
160	Cd+2	1.000E-01	-1.000	1.330E+00
231	Cu+2	1.000E+01	1.000	1.640E+02
150	Ca+2	1.000E+00	0.000	3.890E+02
281	Fe+3	5.495E-07	-6.260	2.320E-01
600	Pb+2	1.000E-03	-3.000	7.880E-02
460	Mg+2	1.000E+01	1.000	2.010E+02
470	Mn+2	1.000E+00	0.000	2.000E+02
410	K+1	1.000E+00	0.000	3.370E+01
500	Na+1	1.000E+01	1.000	2.010E+02
950	Zn+2	1.000E+01	1.000	2.700E+02
61	H3AsO4	1.000E-02	-2.000	2.000E-03
732	SO4-2	1.000E+02	2.000	3.100E+03
580	PO4-3	1.000E-02	-2.000	1.200E-01
492	NO3-1	1.000E-01	-1.000	9.900E+00
270	F-1	2.399E-04	-3.620	8.000E+00
180	Cl-1	1.288E-03	-2.890	4.300E+01
140	CO3-2	1.000E-02	-2.000	0.000E-01
330	H+1	1.096E-04	-3.960	0.000E-01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 7.013E-02 Sum of ANIONS = 6.665E-02

PERCENT DIFFERENCE = 2.545E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Al+3	23.0	PERCENT BOUND IN SPECIES # 30	Al+3
29.3	PERCENT BOUND IN SPECIES # 302700	AlF +2	
3.3	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
27.1	PERCENT BOUND IN SPECIES # 307320	AlSO4 +	
16.7	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -	
Cd+2	48.3	PERCENT BOUND IN SPECIES # 160	Cd+2
2.1	PERCENT BOUND IN SPECIES #1601800	CdCl +	
40.4	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
9.2	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	62.8	PERCENT BOUND IN SPECIES # 231	Cu+2
37.2	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
Ca+2	62.9	PERCENT BOUND IN SPECIES # 150	Ca+2
37.1	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Fe+3	1.8	PERCENT BOUND IN SPECIES # 281	Fe+3
31.3	PERCENT BOUND IN SPECIES #2813300	FeOH +2	
16.7	PERCENT BOUND IN SPECIES #2817320	FeSO4 +	
45.7	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
4.1	PERCENT BOUND IN SPECIES #2817321	Fe(SO4)2 -	
Pb+2	35.3	PERCENT BOUND IN SPECIES # 600	Pb+2
57.7	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
6.3	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2	
Mg+2	66.0	PERCENT BOUND IN SPECIES # 460	Mg+2
34.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+2	65.4	PERCENT BOUND IN SPECIES # 470	Mn+2
34.5	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
K+1	94.8	PERCENT BOUND IN SPECIES # 410	K+1
5.2	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
Na+1	96.2	PERCENT BOUND IN SPECIES # 500	Na+1
3.8	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	55.7	PERCENT BOUND IN SPECIES # 950	Zn+2
37.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
6.4	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
H3AsO4	1.5	PERCENT BOUND IN SPECIES # 61	H3AsO4
98.2	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
SO4-2	63.1	PERCENT BOUND IN SPECIES # 732	SO4-2
8.7	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
11.2	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
1.2	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -	
3.9	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
3.0	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
4.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
1.6	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	

PO4-3	87.2	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	1.0	PERCENT BOUND IN SPECIES #3305802	H3PO4
	5.9	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +
	5.2	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
F-1	81.5	PERCENT BOUND IN SPECIES # 302700	AlF +2
	18.1	PERCENT BOUND IN SPECIES # 302701	AlF2 +
Cl-1	99.2	PERCENT BOUND IN SPECIES # 180	Cl-1
CO3-2	99.2	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
H+1	32.5	PERCENT BOUND IN SPECIES # 330	H+1
	45.3	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
	24.5	PERCENT BOUND IN SPECIES #3307320	HSO4 -
H2O	56.7	PERCENT BOUND IN SPECIES # 303300	AlOH +2
	3.9	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	9.8	PERCENT BOUND IN SPECIES #2813300	FeOH +2
	28.8	PERCENT BOUND IN SPECIES #2813301	FeOH2 +

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
30	Al+3	1.177E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.189E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.593E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	9.751E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	4.174E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	8.306E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	3.658E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.659E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	4.150E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	3.242E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	1.269E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	4.231E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.219E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	9.826E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	4.301E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	1.326E-05	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 4.719E-02 Sum of ANIONS 4.347E-02

PERCENT DIFFERENCE = 4.098E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 8.515E-02

EQUILIBRIUM pH = 3.960

DATE ID NUMBER: 930228
TIME ID NUMBER: 17213878

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
2003000	ALOH3(A)	-3.014	[1.000] 30 [3.000] 2 [-3.000] 330
6003000	ALOHSO4	0.567	[-1.000] 330 [1.000] 30 [1.000] 732
			[1.000] 2
6003001	AL4(OH)10SO4	-3.266	[-10.000] 330 [4.000] 30 [1.000] 732
			[10.000] 2
6041000	ALUM K	-6.758	[1.000] 410 [1.000] 30 [2.000] 732
			[12.000] 2
6041001	ALUNITE	4.155	[1.000] 410 [3.000] 30 [2.000] 732
			[6.000] 2 [-6.000] 330
6015000	ANHYDRITE	-0.105	[1.000] 150 [1.000] 732
5015000	ARAGONITE	-7.060	[1.000] 150 [1.000] 140
5046000	ARTINITE	-19.808	[-2.000] 330 [2.000] 460 [1.000] 140
			[5.000] 2
2003001	BOEHMITE	-1.212	[-3.000] 330 [1.000] 30 [2.000] 2
2046000	BRUCITE	-11.554	[1.000] 460 [2.000] 2 [-2.000] 330
5015001	CALCITE	-6.921	[1.000] 150 [1.000] 140
2003002	DIASPORE	0.493	[-3.000] 330 [1.000] 30 [2.000] 2
5015002	DOLOMITE	-13.840	[1.000] 150 [1.000] 460 [2.000] 140
6046000	EPSOMITE	-2.654	[1.000] 460 [1.000] 732 [7.000] 2
2028100	FERRIHYDRITE	-1.086	[-3.000] 330 [1.000] 281 [3.000] 2
4128100	FEOH)2.7CL.3	4.750	[-2.700] 330 [1.000] 281 [2.700] 2
			[0.300] 180
6028100	FE2(SO4)3	-26.055	[2.000] 281 [3.000] 732
7015003	HYDRAPATITE	-18.084	[5.000] 150 [3.000] 580 [1.000] 2
			[-1.000] 330
7015002	FCO3APATITE	-27.834	[9.496] 150 [0.360] 500 [0.144] 460
			[4.800] 580 [1.200] 140 [2.480] 270
4215000	FLUORITE	-4.442	[1.000] 150 [2.000] 270
2003003	GIBBSITE (C)	-1.404	[-3.000] 330 [1.000] 30 [3.000] 2
3003000	A12O3	-8.247	[2.000] 30 [3.000] 2 [-6.000] 330
2028102	GOETHITE	3.305	[-3.000] 330 [1.000] 281 [2.000] 2
6015001	GYPSUM	0.105	[1.000] 150 [1.000] 732 [2.000] 2
4150000	HALITE	-6.782	[1.000] 500 [1.000] 180
3028100	HEMATITE	11.619	[-6.000] 330 [2.000] 281 [3.000] 2
5015003	HUNTITE	-31.761	[3.000] 460 [1.000] 150 [4.000] 140
5046001	HYDRMAGNESIT	-47.776	[5.000] 460 [4.000] 140 [-2.000] 330
			[6.000] 2
6050000	JAROSITE NA	4.340	[-6.000] 330 [1.000] 500 [3.000] 281
			[2.000] 732 [6.000] 2
6041002	JAROSITE K	6.927	[-6.000] 330 [1.000] 410 [3.000] 281
			[2.000] 732 [6.000] 2
6028101	JAROSITE H	3.457	[-5.000] 330 [3.000] 281 [2.000] 732
			[7.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
3028101	MAGHEMITE	1.225	[-6.000]	330	[2.000]	281	[3.000]	2				
5046002	MAGNESITE	-7.416	[1.000]	460	[1.000]	140						
6050001	MIRABILITE	-5.356	[2.000]	500	[1.000]	732	[10.000]	2				
3050000	NATRON	-15.814	[2.000]	500	[1.000]	140	[10.000]	2				
5046003	NESQUEHONITE	-9.825	[1.000]	460	[1.000]	140	[3.000]	2				
7028100	STRENGITE	0.632	[1.000]	281	[1.000]	580	[2.000]	2				
6050002	THENARDITE	-6.286	[2.000]	500	[1.000]	732						
5050001	THERMONATR	-17.245	[2.000]	500	[1.000]	140	[1.000]	2				
2047003	PYROCROITE	-10.210	[-2.000]	330	[1.000]	470	[2.000]	2				
5047000	RHODOCHROSIT	-5.395	[1.000]	470	[1.000]	140						
4147000	MNCL2, 4H2O	-11.798	[1.000]	470	[2.000]	180	[4.000]	2				
6047000	MNSO4	-7.819	[1.000]	470	[1.000]	732						
7047000	MN3(PO4)2	-20.684	[3.000]	470	[2.000]	580						
4123100	MELANOTHALLI	-12.983	[1.000]	231	[2.000]	180						
5023100	CUCO3	-6.342	[1.000]	231	[1.000]	140						
4223100	CUF2	-15.347	[1.000]	231	[2.000]	270						
4223101	CUF2, 2H2O	-11.418	[1.000]	231	[2.000]	270	[2.000]	2				
2023100	CU(OH)2	-3.929	[-2.000]	330	[1.000]	231	[2.000]	2				
4123101	ATACAMITE	-4.901	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	180								
5123100	CU2(OH)3NO3	-7.678	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	492								
6023100	ANTLERITE	-4.187	[-4.000]	330	[3.000]	231	[4.000]	2				
			[1.000]	732								
6023101	BROCHANTITE	-6.526	[-6.000]	330	[4.000]	231	[6.000]	2				
			[1.000]	732								
6023102	LANGITE	-7.977	[-6.000]	330	[4.000]	231	[7.000]	2				
			[1.000]	732								
2023101	TENORITE	-2.909	[-2.000]	330	[1.000]	231	[1.000]	2				
6023103	CUOCUSO4	-12.137	[-2.000]	330	[2.000]	231	[1.000]	2				
			[1.000]	732								
7023100	CU3(PO4)2	-8.163	[3.000]	231	[2.000]	580						
7023101	CU3(PO4)2,3W	-9.894	[3.000]	231	[2.000]	580	[3.000]	2				
6023104	CUSO4	-8.328	[1.000]	231	[1.000]	732						
6023105	CHALCANTHITE	-2.680	[1.000]	231	[1.000]	732	[5.000]	2				
3023100	CUPRICFERIT	6.442	[-8.000]	330	[1.000]	231	[2.000]	281				
			[4.000]	2								
4195000	ZNCL2	-16.131	[1.000]	950	[2.000]	180						
5095000	SMITHSONITE	-5.820	[1.000]	950	[1.000]	140						
5095001	ZNCO3, 1H2O	-5.560	[1.000]	950	[1.000]	140	[1.000]	2				
4295000	ZNF2	-14.295	[1.000]	950	[2.000]	270						
2095000	ZN(OH)2 (A)	-7.587	[-2.000]	330	[1.000]	950	[2.000]	2				
2095001	ZN(OH)2 (C)	-7.337	[-2.000]	330	[1.000]	950	[2.000]	2				
2095002	ZN(OH)2 (B)	-6.887	[-2.000]	330	[1.000]	950	[2.000]	2				
2095003	ZN(OH)2 (G)	-6.847	[-2.000]	330	[1.000]	950	[2.000]	2				
2095004	ZN(OH)2 (E)	-6.637	[-2.000]	330	[1.000]	950	[2.000]	2				
4195001	ZN2(OH)3CL	-12.457	[-3.000]	330	[2.000]	950	[3.000]	2				
			[1.000]	180								
4195002	ZN5(OH)8CL2	-28.151	[-8.000]	330	[5.000]	950	[8.000]	2				
			[2.000]	180								
6095000	ZN2(OH)2SO4	-7.803	[-2.000]	330	[2.000]	950	[2.000]	2				
			[1.000]	732								

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
6095001	ZN4(OH)6SO4	-18.977	[-6.000] 330 [4.000] 950 [6.000] 2 [1.000] 732
5195000	ZNNO3)2,6H2O	-14.299	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-6.447	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-6.277	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-24.488	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-12.518	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-8.175	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-4.596	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-3.404	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-3.209	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	-4.685	[1.000] 160 [1.000] 140
4116000	CDCL2	-11.026	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-9.997	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-9.768	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-15.440	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-11.472	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-11.392	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-8.244	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-25.815	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-19.993	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-29.397	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-12.862	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-19.771	[3.000] 160 [2.000] 580
6016003	CDSO4	-7.670	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-6.114	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-5.899	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-8.564	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-7.261	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-13.577	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-6.923	[1.000] 600 [1.000] 140
4260000	PBF2	-12.608	[1.000] 600 [2.000] 270
2060000	MASSICOT	-12.280	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-12.090	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-12.350	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-18.923	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-8.488	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-18.538	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-29.608	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	-8.120	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-22.778	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5060002	PB3O2CO3	-29.812	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2
7060003	PLUMBGUMMITE	-3.628	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-14.374	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-13.814	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-1.608	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-7.520	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-6.975	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-14.516	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-22.016	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-24.940	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-28.610	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-6.081	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-10.313	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-26.055	[2.000] 61 [-3.000] 2
7047001	MNHPO4(C)	0.705	[1.000] 470 [1.000] 580 [1.000] 330
7060006	PBHPO4	-5.043	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-12.755	[3.000] 600 [2.000] 580
7203000	ALASO4.2W	-7.113	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-25.797	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-11.324	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	-6.273	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7247000	MN3ASO428W	-17.226	[3.000] 470 [2.000] 61 [8.000] 2 [-6.000] 330
7260000	PB3(ASO4)2	-23.265	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-18.418	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-27.510	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-17.388	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-16.272	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-16.362	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	-3.915	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-17.832	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	2.434	[-3.000] 330 [1.000] 281 [2.000] 2

Sample 9233c90 - Aqueous speciation at fixed pH; no solids allowed

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Temperature (Celsius): 25.00
Units of concentration: MG/L
Ionic strength to be computed.
Carbonate concentration represents carbonate alkalinity.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 200
The method used to compute activity coefficients is: Davies equation
Intermediate output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
30	Al+3	1.000E-03	-3.000	4.540E-02
160	Cd+2	1.000E-04	-4.000	2.200E-03
231	Cu+2	1.000E-03	-3.000	3.020E-02
150	Ca+2	1.000E+01	1.000	2.250E+02
281	Fe+3	1.000E-03	-3.000	5.560E-02
600	Pb+2	1.000E-04	-4.000	1.000E-03
460	Mg+2	1.000E-01	-1.000	7.390E+01
470	Mn+2	1.000E-03	-3.000	1.840E-02
410	K+1	1.000E-01	-1.000	2.120E+01
500	Na+1	5.248E-03	-2.280	1.380E+02
950	Zn+2	1.000E-03	-3.000	6.210E-02
61	H3AsO4	1.000E-02	-2.000	1.400E-01
732	SO4-2	5.370E-03	-2.270	8.800E+02
580	PO4-3	1.000E-02	-2.000	4.400E-01
492	NO3-1	1.000E-01	-1.000	2.700E+01
270	F-1	2.399E-04	-3.620	2.500E+00
180	Cl-1	1.288E-03	-2.890	1.500E+01
330	H+1	1.349E-07	-6.870	0.000E-01
140	CO3-2	3.802E-12	-11.420	1.091E+02
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 2.390E-02 Sum of ANIONS = 2.300E-02

PERCENT DIFFERENCE = 1.925E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Al+3	2.0	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	13.9	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	25.6	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	39.6	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	2.3	PERCENT BOUND IN SPECIES # 302703	AlF4 -
	15.7	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
Cd+2	52.5	PERCENT BOUND IN SPECIES # 160	Cd+2
	1.1	PERCENT BOUND IN SPECIES #1601800	CdCl +
	26.6	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	10.9	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +
	6.8	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ
	2.0	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2
Cu+2	17.9	PERCENT BOUND IN SPECIES # 231	Cu+2
	49.6	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	10.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
	6.4	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
	14.9	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +
Ca+2	72.6	PERCENT BOUND IN SPECIES # 150	Ca+2
	1.3	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	26.0	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
Fe+3	92.6	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	6.8	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
Pb+2	8.0	PERCENT BOUND IN SPECIES # 600	Pb+2
	7.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ
	72.0	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ
	10.6	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +
Mg+2	74.7	PERCENT BOUND IN SPECIES # 460	Mg+2
	1.5	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	23.4	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Mn+2	73.8	PERCENT BOUND IN SPECIES # 470	Mn+2
	23.6	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
	2.4	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +
K+1	97.6	PERCENT BOUND IN SPECIES # 410	K+1
	2.4	PERCENT BOUND IN SPECIES #4107320	KSO4 -
Na+1	98.1	PERCENT BOUND IN SPECIES # 500	Na+1
	1.7	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Zn+2	56.9	PERCENT BOUND IN SPECIES # 950	Zn+2
	23.5	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	1.3	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
	11.9	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	5.9	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ
H3AsO4	31.7	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	68.3	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2

SO4-2	75.0	PERCENT BOUND IN SPECIES #	732	SO4-2
7.8	PERCENT BOUND IN SPECIES #4607320		MgSO4 AQ	
15.9	PERCENT BOUND IN SPECIES #1507320		CaSO4 AQ	
1.1	PERCENT BOUND IN SPECIES #5007320		NaSO4 -	
PO4-3	37.8	PERCENT BOUND IN SPECIES #3305801		H2PO4 -
1.4	PERCENT BOUND IN SPECIES #4605801		MgH2PO4 +	
12.6	PERCENT BOUND IN SPECIES #4605802		MgHPO4 AQ	
16.5	PERCENT BOUND IN SPECIES #1505800		CaHPO4 AQ	
2.0	PERCENT BOUND IN SPECIES #1505802		CaH2PO4 +	
28.9	PERCENT BOUND IN SPECIES #3305800		HPO4 -2	
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
F-1	89.2	PERCENT BOUND IN SPECIES #	270	F-1
6.8	PERCENT BOUND IN SPECIES #4602700		MgF +	
1.6	PERCENT BOUND IN SPECIES #1502700		CaF +	
1.5	PERCENT BOUND IN SPECIES # 302702		AlF3 AQ	
Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
CO3-2	1.0	PERCENT BOUND IN SPECIES #4601401		MgHCO3 +
1.7	PERCENT BOUND IN SPECIES #1501400		CaHCO3 +	
77.3	PERCENT BOUND IN SPECIES #3301400		HCO3 -	
19.6	PERCENT BOUND IN SPECIES #3301401		H2CO3 AQ	
H2O	2.2	PERCENT BOUND IN SPECIES #3300020		OH-
1.7	PERCENT BOUND IN SPECIES # 303301		Al(OH)2 +	
22.9	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -	
19.5	PERCENT BOUND IN SPECIES # 303303		Al(OH)3 AQ	
45.1	PERCENT BOUND IN SPECIES #2813301		FeOH2 +	
4.9	PERCENT BOUND IN SPECIES #2813302		FeOH3 AQ	
2.4	PERCENT BOUND IN SPECIES #2313301		Cu(OH)2 AQ	
H+1	1.4	PERCENT BOUND IN SPECIES #1501400		CaHCO3 +
64.7	PERCENT BOUND IN SPECIES #3301400		HCO3 -	
32.9	PERCENT BOUND IN SPECIES #3301401		H2CO3 AQ	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
30	Al+3	1.685E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.960E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	4.760E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.622E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	9.971E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.834E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	3.044E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	3.354E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.430E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.012E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	9.514E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	9.877E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	9.174E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	4.640E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	4.361E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	1.318E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	4.237E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	4.523E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	4.090E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	5.405E-03	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.927E-02 Sum of ANIONS 1.837E-02

PERCENT DIFFERENCE = 2.402E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

NON-CARBONATE ALKALINITY = -6.705E-08

EQUILIBRIUM IONIC STRENGTH (m) = 3.207E-02

EQUILIBRIUM pH = 6.870

DATE ID NUMBER: 930228
TIME ID NUMBER: 21022835

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
2003000	ALOH3(A)	-0.953	[1.000]	30	[3.000]	2	[-3.000]	330		
6003000	ALOHSO4	-3.540	[-1.000]	330	[1.000]	30	[1.000]	732		
			[1.000]	2						
6003001	AL4(OH)10SO4	-1.189	[-10.000]	330	[4.000]	30	[1.000]	732		
			[10.000]	2						
6041000	ALUM K	-14.278	[1.000]	410	[1.000]	30	[2.000]	732		
			[12.000]	2						
6041001	ALUNITE	0.754	[1.000]	410	[3.000]	30	[2.000]	732		
			[6.000]	2	[-6.000]	330				
6015000	ANHYDRITE	-0.504	[1.000]	150	[1.000]	732				
5015000	ARAGONITE	-0.337	[1.000]	150	[1.000]	140				
5046000	ARTINITE	-7.726	[-2.000]	330	[2.000]	460	[1.000]	140		
			[5.000]	2						
2003001	BOEHMITE	0.849	[-3.000]	330	[1.000]	30	[2.000]	2		
2046000	BRUCITE	-5.990	[1.000]	460	[2.000]	2	[-2.000]	330		
5015001	CALCITE	-0.199	[1.000]	150	[1.000]	140				
2003002	DIASPORE	2.554	[-3.000]	330	[1.000]	30	[2.000]	2		
5015002	DOLOMITE	-0.601	[1.000]	150	[1.000]	460	[2.000]	140		
6046000	EPSOMITE	-3.256	[1.000]	460	[1.000]	732	[7.000]	2		
2028100	FERRIHYDRITE	1.540	[-3.000]	330	[1.000]	281	[3.000]	2		
4128100	FEOH)2.7CL.3	6.377	[-2.700]	330	[1.000]	281	[2.700]	2		
			[0.300]	180						
6028100	FE2(SO4)3	-39.306	[2.000]	281	[3.000]	732				
7015003	HYDRAPATITE	2.720	[5.000]	150	[3.000]	580	[1.000]	2		
			[-1.000]	330						
7015002	FCO3APATITE	14.658	[9.496]	150	[0.360]	500	[0.144]	460		
			[4.800]	580	[1.200]	140	[2.480]	270		
4215000	FLUORITE	0.258	[1.000]	150	[2.000]	270				
2003003	GIBBSITE (C)	0.657	[-3.000]	330	[1.000]	30	[3.000]	2		
3003000	A12O3	-4.126	[2.000]	30	[3.000]	2	[-6.000]	330		
2028102	GOETHITE	5.932	[-3.000]	330	[1.000]	281	[2.000]	2		
6015001	GYPSUM	-0.293	[1.000]	150	[1.000]	732	[2.000]	2		
4150000	HALITE	-7.331	[1.000]	500	[1.000]	180				
3028100	HEMATITE	16.871	[-6.000]	330	[2.000]	281	[3.000]	2		
5015003	HUNTITE	-5.487	[3.000]	460	[1.000]	150	[4.000]	140		
5046001	HYDRMAGNESIT	-16.141	[5.000]	460	[4.000]	140	[-2.000]	330		
			[6.000]	2						
6050000	JAROSITE NA	2.668	[-6.000]	330	[1.000]	500	[3.000]	281		
			[2.000]	732	[6.000]	2				
6041002	JAROSITE K	5.222	[-6.000]	330	[1.000]	410	[3.000]	281		
			[2.000]	732	[6.000]	2				
6028101	JAROSITE H	-0.999	[-5.000]	330	[3.000]	281	[2.000]	732		
			[7.000]	2						

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
3028101	MAGHEMITE	6.477	[-6.000] 330 [2.000] 281 [3.000] 2
5046002	MAGNESITE	-0.898	[1.000] 460 [1.000] 140
6050001	MIRABILITE	-5.950	[2.000] 500 [1.000] 732 [10.000] 2
3050000	NATRON	-9.286	[2.000] 500 [1.000] 140 [10.000] 2
5046003	NESQUEHONITE	-3.307	[1.000] 460 [1.000] 140 [3.000] 2
7028100	STRENGITE	0.579	[1.000] 281 [1.000] 580 [2.000] 2
6050002	THENARDITE	-6.883	[2.000] 500 [1.000] 732
5050001	THERMONATR	-10.720	[2.000] 500 [1.000] 140 [1.000] 2
2047003	PYROCROITE	-8.249	[-2.000] 330 [1.000] 470 [2.000] 2
5047000	RHODOCHROSIT	-2.480	[1.000] 470 [1.000] 140
4147000	MNCL2, 4H2O	-16.505	[1.000] 470 [2.000] 180 [4.000] 2
6047000	MNSO4	-12.027	[1.000] 470 [1.000] 732
7047000	MN3(PO4)2	-20.162	[3.000] 470 [2.000] 580
4123100	MELANOTHALLI	-17.988	[1.000] 231 [2.000] 180
5023100	CUCO3	-3.724	[1.000] 231 [1.000] 140
4223100	CUF2	-14.751	[1.000] 231 [2.000] 270
4223101	CUF2, 2H2O	-10.822	[1.000] 231 [2.000] 270 [2.000] 2
2023100	CU(OH)2	-2.265	[-2.000] 330 [1.000] 231 [2.000] 2
4123101	ATACAMITE	-4.907	[-3.000] 330 [2.000] 231 [3.000] 2 [1.000] 180
5123100	CU2(OH)3NO3	-6.794	[-3.000] 330 [2.000] 231 [3.000] 2 [1.000] 492
6023100	ANTLERITE	-5.362	[-4.000] 330 [3.000] 231 [4.000] 2 [1.000] 732
6023101	BROCHANTITE	-6.037	[-6.000] 330 [4.000] 231 [6.000] 2 [1.000] 732
6023102	LANGITE	-7.487	[-6.000] 330 [4.000] 231 [7.000] 2 [1.000] 732
2023101	TENORITE	-1.245	[-2.000] 330 [1.000] 231 [1.000] 2
6023103	CUOCUSO4	-14.976	[-2.000] 330 [2.000] 231 [1.000] 2 [1.000] 732
7023100	CU3(PO4)2	-8.530	[3.000] 231 [2.000] 580
7023101	CU3(PO4)2,3W	-10.261	[3.000] 231 [2.000] 580 [3.000] 2
6023104	CUSO4	-12.832	[1.000] 231 [1.000] 732
6023105	CHALCANTHITE	-7.183	[1.000] 231 [1.000] 732 [5.000] 2
3023100	CUPRICFERIT	13.359	[-8.000] 330 [1.000] 231 [2.000] 281 [4.000] 2
4195000	ZNCL2	-20.485	[1.000] 950 [2.000] 180
5095000	SMITHSONITE	-2.551	[1.000] 950 [1.000] 140
5095001	ZNCO3, 1H2O	-2.291	[1.000] 950 [1.000] 140 [1.000] 2
4295000	ZNF2	-13.048	[1.000] 950 [2.000] 270
2095000	ZN(OH)2 (A)	-5.272	[-2.000] 330 [1.000] 950 [2.000] 2
2095001	ZN(OH)2 (C)	-5.022	[-2.000] 330 [1.000] 950 [2.000] 2
2095002	ZN(OH)2 (B)	-4.572	[-2.000] 330 [1.000] 950 [2.000] 2
2095003	ZN(OH)2 (G)	-4.532	[-2.000] 330 [1.000] 950 [2.000] 2
2095004	ZN(OH)2 (E)	-4.322	[-2.000] 330 [1.000] 950 [2.000] 2
4195001	ZN2(OH)3CL	-11.160	[-3.000] 330 [2.000] 950 [3.000] 2 [1.000] 180
4195002	ZN5(OH)8CL2	-23.242	[-8.000] 330 [5.000] 950 [8.000] 2 [2.000] 180
6095000	ZN2(OH)2SO4	-9.340	[-2.000] 330 [2.000] 950 [2.000] 2 [1.000] 732

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
6095001	ZN4(OH)6SO4	-15.884	[-6.000] 330 [4.000] 950 [6.000] 2 [1.000] 732
5195000	ZNNO3)2,6H2O	-16.871	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-4.132	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-3.962	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-29.878	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-10.931	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-12.028	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-8.448	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-7.254	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-7.060	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	-0.532	[1.000] 160 [1.000] 140
4116000	CDCL2	-14.496	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-13.466	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-13.236	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-13.309	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-8.273	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-8.193	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-8.379	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-22.385	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-22.732	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-22.768	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-9.663	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-15.534	[3.000] 160 [2.000] 580
6016003	CDSO4	-10.639	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-9.083	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-8.867	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-11.829	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-7.726	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-12.484	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-2.565	[1.000] 600 [1.000] 140
4260000	PBF2	-10.273	[1.000] 600 [2.000] 270
2060000	MASSICOT	-8.876	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-8.686	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-8.946	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-11.161	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-7.849	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-14.495	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-22.160	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	-2.474	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-13.798	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5060002	PB3O2CO3	-18.647	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2
7060003	PLUMBGUMMITE	0.599	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-13.635	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-8.020	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-4.373	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-4.116	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-6.906	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-11.042	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-9.897	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-18.132	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-21.161	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-1.799	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-3.413	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-29.108	[2.000] 61 [-3.000] 2
7047001	MNHPO4(C)	-0.014	[1.000] 470 [1.000] 580 [1.000] 330
7060006	PBHPO4	-4.319	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-7.903	[3.000] 600 [2.000] 580
7203000	ALASO4.2W	-6.578	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-11.542	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-9.384	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	-5.173	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7247000	MN3ASO428W	-14.394	[3.000] 470 [2.000] 61 [8.000] 2 [-6.000] 330
7260000	PB3(ASO4)2	-16.107	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-14.524	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-21.741	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-11.619	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-10.708	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-6.677	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	6.901	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-10.621	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	5.061	[-3.000] 330 [1.000] 281 [2.000] 2

MINTEQA2 OUTPUT FOR pH SWEEPS

Table E-3.2. Summary of MINTEQA2 model run boundary conditions for pH sweeps.

SITE	TREATMENT	DEPTH	DATE	EXCLUDED SOLIDS
MINTEQA2 MODEL BOUNDARY CONDITIONS All runs performed at 25 degrees C Values for pH fixed at sweep value Values of pCO_2 fixed at 0.003 atm Values for Eh calculated Davies equation used to compute activity coefficients Precipitation of solid phases permitted[1]				
07 - Rocker	Control	40	8-15-90	Al_2O_3, diaspore, hematite, goethite, FCO_3 apatite
21 - Ramsay	Control	40	8-15-90	Al_2O_3, diaspore, hematite, goethite
33 - Opportunity	Control	40	4-29-92	Al_2O_3, diaspore, hematite, goethite
33 - Opportunity	Control	90	4-29-92	Al_2O_3, diaspore, hematite, goethite

```
                                PART 1 of OUTPUT FILE
 PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 25-FEB-93  TIME:  8:45: 2

9007c40 - pH sweep from 5.5 to 9 at fixed pCO2

-------------------------------------------------------------------------------
 Temperature (Celsius):  25.00
 Units of concentration: MG/L
 Ionic strength to be computed.
 If specified, carbonate concentration represents total inorganic carbon.
 Do not automatically terminate if charge imbalance exceeds 30%
 Precipitation is allowed for all solids in the thermodynamic database and
   the print option for solids is set to: 1
 The maximum number of iterations is: 200
 The method used to compute activity coefficients is: Davies equation
 Intermediate output file
-------------------------------------------------------------------------------

                                PART 1 of OUTPUT FILE
 PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 25-FEB-93  TIME:  8:45:15

-------------------------------------------------------------------------------

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
---------- THE INPUT DATA WILL BE USED IN A SERIES OF  8 SWEEPS ------------
  The input parameters for each sweep will be identical to this initial
  listing except that:
  --  The fixed equilibrium pH in successive sweeps will be:
        5.50    6.00    6.50    7.00    7.50    8.00
        8.50    9.00
  --  After the first sweep, the initial component activity guesses
      for each successive sweep are the equilibrium activities computed at the
      end of the sweep which precedes it.

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INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.000E-02	-2.000	0.000E-01
30	Al+3	1.000E-02	-2.000	1.230E-01
160	Cd+2	1.000E-03	-3.000	1.800E-02
231	Cu+2	1.000E-02	-2.000	6.320E-01
150	Ca+2	1.000E+00	0.000	2.040E+01
281	Fe+3	1.000E-02	-2.000	6.800E-01
600	Pb+2	1.000E-03	-3.000	4.430E-02
460	Mg+2	1.000E-01	-1.000	2.850E+00
470	Mn+2	1.000E-02	-2.000	7.910E-01
410	K+1	1.000E-01	-1.000	6.180E+00
500	Na+1	1.000E+01	1.000	1.490E+02
950	Zn+2	1.000E-01	-1.000	3.960E+00
732	SO4-2	1.000E+01	1.000	2.110E+02
580	PO4-3	1.000E-06	-6.000	6.400E-02
492	NO3-1	1.000E-01	-1.000	8.410E+00
270	F-1	1.000E-01	-1.000	1.040E+00
180	Cl-1	1.000E-01	-1.000	6.350E+00
140	CO3-2	1.000E-02	-2.000	0.000E-01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 8.116E-03 Sum of ANIONS = 4.766E-03

PERCENT DIFFERENCE = 2.600E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	1.218E-05	-4.914	3.040	0.000
7060001	CLPYROMORPH	1.599E-08	-7.796	84.430	0.000
7047001	MNHPO4(C)	4.832E-09	-8.316	25.400	0.000

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
Al+3	3.6	PERCENT BOUND IN SPECIES #	302700	Al F +2
57.4	PERCENT BOUND IN SPECIES #	302701	Al F2 +	
38.1	PERCENT BOUND IN SPECIES #	302702	Al F3 AQ	
Cd+2	77.7	PERCENT BOUND IN SPECIES #	160	Cd+2
20.8	PERCENT BOUND IN SPECIES #	1607320	CdSO4 AQ	
Cu+2	83.4	PERCENT BOUND IN SPECIES #	231	Cu+2
15.8	PERCENT BOUND IN SPECIES #	2317320	CuSO4 AQ	
Ca+2	84.1	PERCENT BOUND IN SPECIES #	150	Ca+2
15.9	PERCENT BOUND IN SPECIES #	1507320	CaSO4 AQ	
F-1	79.3	PERCENT BOUND IN SPECIES #	270	F-1
9.6	PERCENT BOUND IN SPECIES #	302701	Al F2 +	
9.5	PERCENT BOUND IN SPECIES #	302702	Al F3 AQ	
Pb+2	64.6	PERCENT BOUND IN SPECIES #	600	Pb+2
33.7	PERCENT BOUND IN SPECIES #	6007320	PbSO4 AQ	
Mg+2	85.7	PERCENT BOUND IN SPECIES #	460	Mg+2
14.1	PERCENT BOUND IN SPECIES #	4607320	MgSO4 AQ	
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	99.0	PERCENT BOUND IN SPECIES #	410	K+1
Na+1	99.3	PERCENT BOUND IN SPECIES #	500	Na+1
Zn+2	81.8	PERCENT BOUND IN SPECIES #	950	Zn+2
17.8	PERCENT BOUND IN SPECIES #	9507320	ZnSO4 AQ	
SO4-2	92.8	PERCENT BOUND IN SPECIES #	732	SO4-2
3.7	PERCENT BOUND IN SPECIES #	1507320	CaSO4 AQ	
2.0	PERCENT BOUND IN SPECIES #	5007320	NaSO4 -	
H2O	5.1	PERCENT BOUND IN SPECIES #	3300020	OH-
1.9	PERCENT BOUND IN SPECIES #	303300	Al OH +2	
6.9	PERCENT BOUND IN SPECIES #	303301	Al(OH)2 +	
3.7	PERCENT BOUND IN SPECIES #	303303	Al(OH)3 AQ	
28.3	PERCENT BOUND IN SPECIES #	2313300	CuOH +	
33.8	PERCENT BOUND IN SPECIES #	2313301	Cu(OH)2 AQ	
18.5	PERCENT BOUND IN SPECIES #	9503300	ZnOH +	
Mn+2	85.5	PERCENT BOUND IN SPECIES #	470	Mn+2
14.4	PERCENT BOUND IN SPECIES #	4707320	MnSO4 AQ	
CO3-2	13.4	PERCENT BOUND IN SPECIES #	3301400	HCO3 -
86.4	PERCENT BOUND IN SPECIES #	3301401	H2CO3 AQ	
Fe+3	1.3	PERCENT BOUND IN SPECIES #	2813300	FeOH +2
98.3	PERCENT BOUND IN SPECIES #	2813301	FeOH2 +	

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H+1
                1.6     PERCENT BOUND IN SPECIES #    330   H+1
      7.0   PERCENT BOUND IN SPECIES #3301400   HCO3 -
     90.5   PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ

PO4-3
               96.1     PERCENT BOUND IN SPECIES #3305801   H2PO4 -
      2.5   PERCENT BOUND IN SPECIES #3305800   HPO4 -2
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.755E-04	98.0	0.000E-01	0.0	3.670E-06	2.0
30	Al+3	4.561E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.602E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	9.950E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.092E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	1.337E-07	62.6	0.000E-01	0.0	7.997E-08	37.4
460	Mg+2	1.173E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	6.060E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.197E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	6.901E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	1.440E-05	100.0	0.000E-01	0.0	4.832E-09	0.0
140	CO3-2	1.150E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	4.263E-12	0.0	0.000E-01	0.0	1.218E-05	100.0
330	H+1	2.197E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	6.213E-07	92.2	0.000E-01	0.0	5.282E-08	7.8

Charge Balance: SPECIATED

Sum of CATIONS = 7.801E-03 Sum of ANIONS 4.495E-03

PERCENT DIFFERENCE = 2.689E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 8.786E-03

EQUILIBRIUM pH = 5.500

DATE ID NUMBER: 930225
TIME ID NUMBER: 8454645

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*** This is the beginning of SWEEP NUMBER  2 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    6.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	6.091E-06	-5.215	-5.880	38.690
7060001	CLPYROMORPH	2.918E-08	-7.535	84.430	0.000
7047001	MNHPO4(C)	3.722E-07	-6.429	25.400	0.000

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
Al+3	3.5	PERCENT BOUND IN SPECIES #	302700	AlF +2
56.6	PERCENT BOUND IN SPECIES #	302701	AlF2 +	
37.8	PERCENT BOUND IN SPECIES #	302702	AlF3 AQ	
Cd+2	77.5	PERCENT BOUND IN SPECIES #	160	Cd+2
20.7	PERCENT BOUND IN SPECIES #	1607320	CdSO4 AQ	
SO4-2	92.8	PERCENT BOUND IN SPECIES #	732	SO4-2
3.7	PERCENT BOUND IN SPECIES #	1507320	CaSO4 AQ	
2.0	PERCENT BOUND IN SPECIES #	5007320	NaSO4 -	
Ca+2	84.1	PERCENT BOUND IN SPECIES #	150	Ca+2
15.9	PERCENT BOUND IN SPECIES #	1507320	CaSO4 AQ	
F-1	79.8	PERCENT BOUND IN SPECIES #	270	F-1
9.4	PERCENT BOUND IN SPECIES #	302701	AlF2 +	
9.4	PERCENT BOUND IN SPECIES #	302702	AlF3 AQ	
Pb+2	62.6	PERCENT BOUND IN SPECIES #	600	Pb+2
32.6	PERCENT BOUND IN SPECIES #	6007320	PbSO4 AQ	
1.5	PERCENT BOUND IN SPECIES #	6001401	PbCO3 AQ	
1.5	PERCENT BOUND IN SPECIES #	6001402	PbHCO3 +	
Mg+2	85.7	PERCENT BOUND IN SPECIES #	460	Mg+2
14.1	PERCENT BOUND IN SPECIES #	4607320	MgSO4 AQ	
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	99.0	PERCENT BOUND IN SPECIES #	410	K+1
Na+1	99.3	PERCENT BOUND IN SPECIES #	500	Na+1
Zn+2	81.5	PERCENT BOUND IN SPECIES #	950	Zn+2
17.7	PERCENT BOUND IN SPECIES #	9507320	ZnSO4 AQ	
Cu+2	81.0	PERCENT BOUND IN SPECIES #	231	Cu+2
1.1	PERCENT BOUND IN SPECIES #	2313301	Cu(OH)2 AQ	
15.3	PERCENT BOUND IN SPECIES #	2317320	CuSO4 AQ	
1.3	PERCENT BOUND IN SPECIES #	2311402	CuHCO3 +	
H2O	3.6	PERCENT BOUND IN SPECIES #	3300020	OH-
1.3	PERCENT BOUND IN SPECIES #	303300	AlOH +2	
15.2	PERCENT BOUND IN SPECIES #	303301	Al(OH)2 +	
3.8	PERCENT BOUND IN SPECIES #	303302	Al(OH)4 -	
25.9	PERCENT BOUND IN SPECIES #	303303	Al(OH)3 AQ	
7.6	PERCENT BOUND IN SPECIES #	2313300	CuOH +	
28.6	PERCENT BOUND IN SPECIES #	2313301	Cu(OH)2 AQ	
13.1	PERCENT BOUND IN SPECIES #	9503300	ZnOH +	
CO3-2	32.8	PERCENT BOUND IN SPECIES #	3301400	HCO3 -
66.7	PERCENT BOUND IN SPECIES #	3301401	H2CO3 AQ	
Mn+2	85.5	PERCENT BOUND IN SPECIES #	470	Mn+2

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                14.4     PERCENT BOUND IN SPECIES #4707320   MnSO4 AQ

Fe+3                        98.5     PERCENT BOUND IN SPECIES #2813301   FeOH2 +
                 1.0     PERCENT BOUND IN SPECIES #2813302   FeOH3 AQ

PO4-3                       90.4     PERCENT BOUND IN SPECIES #3305801   H2PO4 -
                 7.5     PERCENT BOUND IN SPECIES #3305800   HPO4 -2

H+1                         19.6     PERCENT BOUND IN SPECIES #3301400   HCO3 -
                79.6     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.792E-04	100.0	0.000E-01	0.0	2.918E-08	0.0
30	Al+3	4.561E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.602E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.197E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.092E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	6.774E-08	31.7	0.000E-01	0.0	1.459E-07	68.3
460	Mg+2	1.173E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	6.060E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	3.859E-06	38.8	0.000E-01	0.0	6.091E-06	61.2
2	H2O	3.069E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	1.489E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	1.403E-05	97.4	0.000E-01	0.0	3.722E-07	2.6
281	Fe+3	1.436E-12	0.0	0.000E-01	0.0	1.218E-05	100.0
580	PO4-3	2.144E-07	31.8	0.000E-01	0.0	4.597E-07	68.2
330	H+1	2.496E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 7.787E-03 Sum of ANIONS 4.534E-03

PERCENT DIFFERENCE = 2.640E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 8.795E-03

EQUILIBRIUM pH = 6.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 8461721

!!
*** This is the beginning of SWEEP NUMBER 3 in the series of 8 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 6.50
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	6.091E-06	-5.215	-5.880	38.690
7060001	CLPYROMORPH	3.469E-08	-7.460	84.430	0.000
7047001	MNHPO4(C)	4.887E-07	-6.311	25.400	0.000
2003001	BOEHMITE	4.169E-06	-5.380	-8.578	28.130

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
Cu+2	67.6	PERCENT BOUND IN SPECIES #	231	Cu+2
5.1	PERCENT BOUND IN SPECIES #2311400			CuCO3 AQ
1.6	PERCENT BOUND IN SPECIES #2313300			CuOH +
9.5	PERCENT BOUND IN SPECIES #2313301			Cu(OH)2 AQ
12.8	PERCENT BOUND IN SPECIES #2317320			CuSO4 AQ
3.3	PERCENT BOUND IN SPECIES #2311402			CuHCO3 +
Cd+2	76.9	PERCENT BOUND IN SPECIES #	160	Cd+2
20.5	PERCENT BOUND IN SPECIES #1607320			CdSO4 AQ
SO4-2	92.9	PERCENT BOUND IN SPECIES #	732	SO4-2
3.7	PERCENT BOUND IN SPECIES #1507320			CaSO4 AQ
2.0	PERCENT BOUND IN SPECIES #5007320			NaSO4 -
Ca+2	84.0	PERCENT BOUND IN SPECIES #	150	Ca+2
15.8	PERCENT BOUND IN SPECIES #1507320			CaSO4 AQ
F-1	97.7	PERCENT BOUND IN SPECIES #	270	F-1
Pb+2	52.7	PERCENT BOUND IN SPECIES #	600	Pb+2
2.4	PERCENT BOUND IN SPECIES #6003300			PbOH +
27.4	PERCENT BOUND IN SPECIES #6007320			PbSO4 AQ
12.8	PERCENT BOUND IN SPECIES #6001401			PbCO3 AQ
4.1	PERCENT BOUND IN SPECIES #6001402			PbHCO3 +
Mg+2	85.6	PERCENT BOUND IN SPECIES #	460	Mg+2
14.1	PERCENT BOUND IN SPECIES #4607320			MgSO4 AQ
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	99.0	PERCENT BOUND IN SPECIES #	410	K+1
Na+1	99.3	PERCENT BOUND IN SPECIES #	500	Na+1
Zn+2	80.7	PERCENT BOUND IN SPECIES #	950	Zn+2
17.5	PERCENT BOUND IN SPECIES #9507320			ZnSO4 AQ
Al+3	2.7	PERCENT BOUND IN SPECIES # 303301		Al(OH)2 +
3.4	PERCENT BOUND IN SPECIES # 303302			Al(OH)4 -
2.2	PERCENT BOUND IN SPECIES # 302700			AlF +2
44.6	PERCENT BOUND IN SPECIES # 302701			AlF2 +
36.4	PERCENT BOUND IN SPECIES # 302702			AlF3 AQ
9.6	PERCENT BOUND IN SPECIES # 303303			Al(OH)3 AQ
H2O	3.0	PERCENT BOUND IN SPECIES #3300020		OH-
1.8	PERCENT BOUND IN SPECIES # 303301			Al(OH)2 +
4.6	PERCENT BOUND IN SPECIES # 303302			Al(OH)4 -
9.8	PERCENT BOUND IN SPECIES # 303303			Al(OH)3 AQ
5.3	PERCENT BOUND IN SPECIES #2313300			CuOH +
63.3	PERCENT BOUND IN SPECIES #2313301			Cu(OH)2 AQ
10.9	PERCENT BOUND IN SPECIES #9503300			ZnOH +
CO3-2	60.4	PERCENT BOUND IN SPECIES #3301400		HCO3 -

	38.8	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
Fe+3		96.5 PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	3.2	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
Mn+2		85.4 PERCENT BOUND IN SPECIES # 470	Mn+2
	14.4	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
PO4-3		76.1 PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	2.1	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ
	20.1	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
H+1		43.6 PERCENT BOUND IN SPECIES #3301400	HCO3 -
	56.0	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.791E-04	100.0	0.000E-01	0.0	3.469E-08	0.0
231	Cu+2	3.859E-06	38.8	0.000E-01	0.0	6.091E-06	61.2
160	Cd+2	1.602E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.197E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.092E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.016E-08	18.8	0.000E-01	0.0	1.735E-07	81.2
460	Mg+2	1.173E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	6.060E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	3.917E-07	8.6	0.000E-01	0.0	4.169E-06	91.4
2	H2O	1.158E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	2.562E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	1.606E-13	0.0	0.000E-01	0.0	1.218E-05	100.0
470	Mn+2	1.392E-05	96.6	0.000E-01	0.0	4.887E-07	3.4
580	PO4-3	8.140E-08	12.1	0.000E-01	0.0	5.928E-07	87.9
330	H+1	3.546E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 7.782E-03 Sum of ANIONS 4.651E-03

PERCENT DIFFERENCE = 2.518E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 8.849E-03

EQUILIBRIUM pH = 6.500

DATE ID NUMBER: 930225
TIME ID NUMBER: 8464061

!!
*** This is the beginning of SWEEP NUMBER 4 in the series of 8 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 7.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	6.091E-06	-5.215	-5.880	38.690
7060001	CLPYROMORPH	3.355E-08	-7.474	84.430	0.000
7047001	MNHPO4(C)	5.345E-07	-6.272	25.400	0.000
2003001	BOEHMITE	4.467E-06	-5.350	-8.578	28.130
2023101	TENORITE	1.645E-06	-5.784	-7.620	15.240

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1	
Zn+2	77.2	PERCENT BOUND IN SPECIES #	950	Zn+2	
16.6	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ			
3.0	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +			
2.1	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ			
Cd+2	73.7	PERCENT BOUND IN SPECIES #	160	Cd+2	
19.5	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ			
2.8	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +			
2.6	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ			
SO4-2	93.0	PERCENT BOUND IN SPECIES #	732	SO4-2	
3.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ			
2.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -			
Ca+2	83.9	PERCENT BOUND IN SPECIES #	150	Ca+2	
15.7	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ			
F-1	99.1	PERCENT BOUND IN SPECIES #	270	F-1	
Pb+2	23.1	PERCENT BOUND IN SPECIES #	600	Pb+2	
3.3	PERCENT BOUND IN SPECIES #6003300	PbOH +			
11.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ			
55.7	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ			
5.6	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +			
Mg+2	85.5	PERCENT BOUND IN SPECIES #	460	Mg+2	
14.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ			
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1	
K+1	99.0	PERCENT BOUND IN SPECIES #	410	K+1	
Na+1	99.3	PERCENT BOUND IN SPECIES #	500	Na+1	
Cu+2	28.0	PERCENT BOUND IN SPECIES #	231	Cu+2	
20.9	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ			
2.1	PERCENT BOUND IN SPECIES #2313300	CuOH +			
39.2	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ			
5.3	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ			
4.3	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +			
Al+3	3.5	PERCENT BOUND IN SPECIES #	303301	Al(OH)2 +	
44.6	PERCENT BOUND IN SPECIES #	303302	Al(OH)4 -		
6.1	PERCENT BOUND IN SPECIES #	302701	AlF2 +		
5.0	PERCENT BOUND IN SPECIES #	302702	AlF3 AQ		
40.3	PERCENT BOUND IN SPECIES #	303303	Al(OH)3 AQ		
CO3-2	82.1	PERCENT BOUND IN SPECIES #	3301400	HCO3 -	
16.7	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ			
Fe+3	89.4	PERCENT BOUND IN SPECIES #	2813301	FeOH2 +	
9.5	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ			
1.1	PERCENT BOUND IN SPECIES #2813303	FeOH4 -			

PO4-3	50.7	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
1.4	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ	
4.5	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ	
42.4	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	
Mn+2	85.1	PERCENT BOUND IN SPECIES # 470	Mn+2
14.3	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
H2O	4.2	PERCENT BOUND IN SPECIES #3300020	OH-
6.3	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
4.3	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
1.7	PERCENT BOUND IN SPECIES #2313300	CuOH +	
65.5	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
14.3	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
3.0	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ	
H+1	70.8	PERCENT BOUND IN SPECIES #3301400	HCO3 -
28.8	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.791E-04	100.0	0.000E-01	0.0	3.355E-08	0.0
950	Zn+2	6.060E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.602E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.197E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.092E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.589E-08	21.5	0.000E-01	0.0	1.677E-07	78.5
460	Mg+2	1.173E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.215E-06	22.3	0.000E-01	0.0	7.735E-06	77.7
30	Al+3	9.371E-08	2.1	0.000E-01	0.0	4.467E-06	97.9
140	CO3-2	5.964E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	3.562E-14	0.0	0.000E-01	0.0	1.218E-05	100.0
580	PO4-3	3.907E-08	5.8	0.000E-01	0.0	6.351E-07	94.2
470	Mn+2	1.387E-05	96.3	0.000E-01	0.0	5.345E-07	3.7
2	H2O	2.652E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	6.910E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 7.773E-03 Sum of ANIONS 4.991E-03

PERCENT DIFFERENCE = 2.180E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 9.012E-03

EQUILIBRIUM pH = 7.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 8470478

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*** This is the beginning of SWEEP NUMBER 5 in the series of 8 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 7.50
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

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Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	6.091E-06	-5.215	-5.880	38.690
7060001	CLPYROMORPH	1.435E-08	-7.843	84.430	0.000
7047001	MNHPO4(C)	6.048E-07	-6.218	25.400	0.000
2003001	BOEHMITE	4.389E-06	-5.358	-8.578	28.130
2023101	TENORITE	2.405E-06	-5.619	-7.620	15.240
5016000	OTAVITE	1.372E-07	-6.863	13.740	0.580

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1	
Zn+2	60.1	PERCENT BOUND IN SPECIES # 950	Zn+2	
1.5	PERCENT BOUND IN SPECIES #9503300	ZnOH +		
12.7	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ		
7.3	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +		
16.5	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ		
1.1	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2		
Na+1	99.2	PERCENT BOUND IN SPECIES # 500	Na+1	
SO4-2	93.2	PERCENT BOUND IN SPECIES # 732	SO4-2	
3.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
2.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
Ca+2	83.5	PERCENT BOUND IN SPECIES # 150	Ca+2	
15.4	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
F-1	99.2	PERCENT BOUND IN SPECIES # 270	F-1	
Pb+2	3.7	PERCENT BOUND IN SPECIES # 600	Pb+2	
1.7	PERCENT BOUND IN SPECIES #6003300	PbOH +		
1.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ		
89.1	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
2.9	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +		
Mg+2	85.0	PERCENT BOUND IN SPECIES # 460	Mg+2	
1.0	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +		
13.7	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1	
K+1	99.1	PERCENT BOUND IN SPECIES # 410	K+1	
Cd+2	57.2	PERCENT BOUND IN SPECIES # 160	Cd+2	
14.9	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ		
6.9	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +		
19.8	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ		
Al+3	77.2	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
22.0	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ		
Cu+2	4.3	PERCENT BOUND IN SPECIES # 231	Cu+2	
31.9	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ		
1.0	PERCENT BOUND IN SPECIES #2313300	CuOH +		
59.8	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
2.1	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +		
Fe+3	68.9	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
23.0	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ		
8.1	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		
Mn+2	84.4	PERCENT BOUND IN SPECIES # 470	Mn+2	
13.9	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
1.6	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +		

PO4-3	24.4	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
2.1	PERCENT BOUND IN SPECIES #4605802		MgHPO4 AQ
6.7	PERCENT BOUND IN SPECIES #1505800		CaHPO4 AQ
65.2	PERCENT BOUND IN SPECIES #3305800		HPO4 -2
H+1	88.1	PERCENT BOUND IN SPECIES #3301400	HCO3 -
11.3	PERCENT BOUND IN SPECIES #3301401		H2CO3 AQ
H2O	8.2	PERCENT BOUND IN SPECIES #3300020	OH-
12.3	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -
2.6	PERCENT BOUND IN SPECIES # 303303		Al(OH)3 AQ
40.3	PERCENT BOUND IN SPECIES #2313301		Cu(OH)2 AQ
21.6	PERCENT BOUND IN SPECIES #9503300		ZnOH +
14.1	PERCENT BOUND IN SPECIES #9503301		Zn(OH)2 AQ
CO3-2	92.2	PERCENT BOUND IN SPECIES #3301400	HCO3 -
5.9	PERCENT BOUND IN SPECIES #3301401		H2CO3 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.792E-04	100.0	0.000E-01	0.0	1.435E-08	0.0
950	Zn+2	6.060E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.197E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.092E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	1.419E-07	66.4	0.000E-01	0.0	7.175E-08	33.6
460	Mg+2	1.173E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	2.304E-08	14.4	0.000E-01	0.0	1.372E-07	85.6
30	Al+3	1.716E-07	3.8	0.000E-01	0.0	4.389E-06	96.2
231	Cu+2	1.454E-06	14.6	0.000E-01	0.0	8.496E-06	85.4
281	Fe+3	1.467E-14	0.0	0.000E-01	0.0	1.218E-05	100.0
470	Mn+2	1.380E-05	95.8	0.000E-01	0.0	6.048E-07	4.2
580	PO4-3	2.630E-08	3.9	0.000E-01	0.0	6.479E-07	96.1
330	H+1	1.761E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	4.309E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	1.683E-03	100.0	0.000E-01	0.0	1.372E-07	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 7.750E-03 Sum of ANIONS 6.071E-03

PERCENT DIFFERENCE = 1.215E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 9.535E-03

EQUILIBRIUM pH = 7.500

DATE ID NUMBER: 930225
TIME ID NUMBER: 8472988

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*** This is the beginning of SWEEP NUMBER  6 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    8.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	6.091E-06	-5.215	-5.880	38.690
5016000	OTAVITE	1.534E-07	-6.814	13.740	0.580
7047001	MNHPO4(C)	5.844E-07	-6.233	25.400	0.000
2003001	BOEHMITE	4.101E-06	-5.387	-8.578	28.130
2023101	TENORITE	2.486E-06	-5.604	-7.620	15.240
5047000	RHODOCHROSIT	1.029E-05	-4.988	10.410	2.079
5095001	ZNCO3, 1H2O	3.502E-05	-4.456	10.260	0.000
5015001	CALCITE	2.026E-04	-3.693	8.475	2.585

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1	
K+1	99.1	PERCENT BOUND IN SPECIES # 410	K+1	
Na+1	99.1	PERCENT BOUND IN SPECIES # 500	Na+1	
SO4-2	95.2	PERCENT BOUND IN SPECIES # 732	SO4-2	
	2.0	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
	2.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1	
F-1	99.4	PERCENT BOUND IN SPECIES # 270	F-1	
Pb+2	7.3	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2	
	90.6	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ	
Mg+2	82.7	PERCENT BOUND IN SPECIES # 460	Mg+2	
	1.1	PERCENT BOUND IN SPECIES #4601400	MgCO3 AQ	
	3.1	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +	
	12.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Ca+2	81.2	PERCENT BOUND IN SPECIES # 150	Ca+2	
	2.7	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +	
	1.5	PERCENT BOUND IN SPECIES #1501401	CaCO3 AQ	
	14.5	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Zn+2	16.0	PERCENT BOUND IN SPECIES # 950	Zn+2	
	1.3	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
	1.3	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ	
	3.3	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
	6.0	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
	42.8	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ	
	29.3	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2	
H+1	95.7	PERCENT BOUND IN SPECIES #3301400	HCO3 -	
	3.8	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	
Fe+3	31.0	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
	32.6	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ	
	36.4	PERCENT BOUND IN SPECIES #2813303	FeOH4 -	
Cd+2	19.9	PERCENT BOUND IN SPECIES # 160	Cd+2	
	5.0	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
	7.5	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +	
	67.0	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ	
PO4-3	9.4	PERCENT BOUND IN SPECIES #3305801	H2PO4 -	
	2.5	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ	
	4.6	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ	
	1.2	PERCENT BOUND IN SPECIES #1505801	CaPO4 -	
	80.9	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	
Al+3	91.7	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
	8.2	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	

Cu+2		33.8	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	1.4	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2	
	63.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
Mn+2		81.8	PERCENT BOUND IN SPECIES # 470	Mn+2
	13.1	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
	4.9	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +	
H2O		19.7	PERCENT BOUND IN SPECIES #3300020	OH-
	29.7	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
	2.0	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
	30.6	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
	5.7	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
	11.7	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ	
CO3-2		96.2	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	1.9	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.792E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.198E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	2.139E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	1.173E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	3.066E-04	60.2	0.000E-01	0.0	2.026E-04	39.8
950	Zn+2	2.558E-05	42.2	0.000E-01	0.0	3.502E-05	57.8
330	H+1	5.160E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	1.037E-14	0.0	0.000E-01	0.0	1.218E-05	100.0
160	Cd+2	6.785E-09	4.2	0.000E-01	0.0	1.534E-07	95.8
580	PO4-3	8.980E-08	13.3	0.000E-01	0.0	5.844E-07	86.7
30	Al+3	4.597E-07	10.1	0.000E-01	0.0	4.101E-06	89.9
231	Cu+2	1.373E-06	13.8	0.000E-01	0.0	8.577E-06	86.2
470	Mn+2	3.533E-06	24.5	0.000E-01	0.0	1.087E-05	75.5
2	H2O	5.676E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	5.133E-03	95.4	0.000E-01	0.0	2.481E-04	4.6

Charge Balance: SPECIATED

Sum of CATIONS = 7.300E-03 Sum of ANIONS 9.619E-03

PERCENT DIFFERENCE = 1.371E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.094E-02

EQUILIBRIUM pH = 8.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 8482063

!!
*** This is the beginning of SWEEP NUMBER 7 in the series of 8 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 8.50
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	6.091E-06	-5.215	-5.880	38.690
5016000	OTAVITE	1.553E-07	-6.809	13.740	0.580
5015001	CALCITE	3.862E-04	-3.413	8.475	2.585
2003001	BOEHMITE	3.161E-06	-5.500	-8.578	28.130
2023101	TENORITE	2.319E-06	-5.635	-7.620	15.240
5047000	RHODOCHROSIT	1.399E-05	-4.854	10.410	2.079
5015002	DOLOMITE	8.427E-05	-4.074	17.000	8.290

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
K+1	99.1	PERCENT BOUND IN SPECIES #	410	K+1
Na+1	98.3	PERCENT BOUND IN SPECIES #	500	Na+1
SO4-2	97.7	PERCENT BOUND IN SPECIES #	732	SO4-2
1.9	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
F-1	99.8	PERCENT BOUND IN SPECIES #	270	F-1
Pb+2	46.6	PERCENT BOUND IN SPECIES #6001400		Pb(CO3)2-2
53.0	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
PO4-3	3.2	PERCENT BOUND IN SPECIES #3305801		H2PO4 -
94.0	PERCENT BOUND IN SPECIES #3305800	HPO4 -2		
Zn+2	11.6	PERCENT BOUND IN SPECIES #9501401		ZnCO3 AQ
86.8	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2		
Mg+2	73.2	PERCENT BOUND IN SPECIES #	460	Mg+2
8.6	PERCENT BOUND IN SPECIES #4601400	MgCO3 AQ		
8.1	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +		
9.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
Al+3	97.3	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -
2.7	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ		
H+1	98.5	PERCENT BOUND IN SPECIES #3301400		HCO3 -
1.2	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ		
Fe+3	6.3	PERCENT BOUND IN SPECIES #2813301		FeOH2 +
20.3	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ		
73.4	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		
Cd+2	3.0	PERCENT BOUND IN SPECIES #	160	Cd+2
3.4	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +		
92.9	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ		
Ca+2	70.0	PERCENT BOUND IN SPECIES #	150	Ca+2
6.9	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +		
12.2	PERCENT BOUND IN SPECIES #1501401	CaCO3 AQ		
10.8	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
H2O	31.7	PERCENT BOUND IN SPECIES #3300020		OH-
47.7	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -		
15.2	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
3.8	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ		
Cu+2	30.1	PERCENT BOUND IN SPECIES #2311400		CuCO3 AQ
13.2	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2		
56.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		

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Mn+2                    75.7     PERCENT BOUND IN SPECIES #    470   Mn+2
          10.4     PERCENT BOUND IN SPECIES #4707320   MnSO4 AQ
          13.4     PERCENT BOUND IN SPECIES #4701400   MnHCO3 +

CO3-2                    2.1     PERCENT BOUND IN SPECIES #    140   CO3-2
          96.1     PERCENT BOUND IN SPECIES #3301400   HCO3 -
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.792E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.197E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	2.139E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	6.742E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	6.060E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	3.301E-05	28.1	0.000E-01	0.0	8.427E-05	71.9
30	Al+3	1.400E-06	30.7	0.000E-01	0.0	3.161E-06	69.3
330	H+1	1.619E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	1.661E-14	0.0	0.000E-01	0.0	1.218E-05	100.0
160	Cd+2	4.892E-09	3.1	0.000E-01	0.0	1.553E-07	96.9
150	Ca+2	3.875E-05	7.6	0.000E-01	0.0	4.704E-04	92.4
2	H2O	1.142E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	1.540E-06	15.5	0.000E-01	0.0	8.410E-06	84.5
470	Mn+2	4.162E-07	2.9	0.000E-01	0.0	1.399E-05	97.1
140	CO3-2	1.660E-02	96.7	0.000E-01	0.0	5.689E-04	3.3

Charge Balance: SPECIATED

Sum of CATIONS = 6.641E-03 Sum of ANIONS 2.150E-02

PERCENT DIFFERENCE = 5.280E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.667E-02

EQUILIBRIUM pH = 8.500

DATE ID NUMBER: 930225
TIME ID NUMBER: 8490336

!!
*** This is the beginning of SWEEP NUMBER 8 in the series of 8 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 9.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	6.090E-06	-5.215	-5.880	38.690
5016000	OTAVITE	1.556E-07	-6.808	13.740	0.580
5015001	CALCITE	3.896E-04	-3.409	8.475	2.585
5047000	RHODOCHROSIT	1.434E-05	-4.843	10.410	2.079
5015002	DOLOMITE	1.102E-04	-3.958	17.000	8.290

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
K+1	99.3	PERCENT BOUND IN SPECIES #	410	K+1
Na+1	94.0	PERCENT BOUND IN SPECIES #	500	Na+1
3.6	PERCENT BOUND IN SPECIES #5001400	NaCO3 -		
1.9	PERCENT BOUND IN SPECIES #5001401	NaHCO3 AQ		
SO4-2	98.5	PERCENT BOUND IN SPECIES #	732	SO4-2
1.4	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
F-1	99.9	PERCENT BOUND IN SPECIES #	270	F-1
Pb+2	91.9	PERCENT BOUND IN SPECIES #6001400		Pb(CO3)2-2
8.1	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
PO4-3	98.1	PERCENT BOUND IN SPECIES #3305800		HPO4 -2
Zn+2	1.0	PERCENT BOUND IN SPECIES #9501401		ZnCO3 AQ
98.9	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2		
Fe+3	7.5	PERCENT BOUND IN SPECIES #2813302		FeOH3 AQ
91.7	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		
Al+3	99.2	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -
Mg+2	43.7	PERCENT BOUND IN SPECIES #	460	Mg+2
39.9	PERCENT BOUND IN SPECIES #4601400	MgCO3 AQ		
12.7	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +		
3.6	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
H+1	99.5	PERCENT BOUND IN SPECIES #3301400		HCO3 -
Cu+2	11.7	PERCENT BOUND IN SPECIES #2311400		CuCO3 AQ
66.3	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2		
21.9	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
H2O	37.9	PERCENT BOUND IN SPECIES #3300020		OH-
56.4	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -		
5.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
Cd+2	1.2	PERCENT BOUND IN SPECIES #1601400		CdHCO3 +
98.2	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ		
Ca+2	36.8	PERCENT BOUND IN SPECIES #	150	Ca+2
9.5	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +		
50.1	PERCENT BOUND IN SPECIES #1501401	CaCO3 AQ		
3.5	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
Mn+2	63.9	PERCENT BOUND IN SPECIES #	470	Mn+2
5.4	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
29.8	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +		

CO3-2 7.6 PERCENT BOUND IN SPECIES # 140 CO3-2
91.4 PERCENT BOUND IN SPECIES #3301400 HCO3 -

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.792E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.581E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.484E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.198E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.357E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.476E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	2.139E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	6.742E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	6.061E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	4.510E-14	0.0	0.000E-01	0.0	1.218E-05	100.0
30	Al+3	4.561E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	7.070E-06	6.0	0.000E-01	0.0	1.102E-04	94.0
330	H+1	5.394E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	3.859E-06	38.8	0.000E-01	0.0	6.090E-06	61.2
2	H2O	3.210E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	4.595E-09	2.9	0.000E-01	0.0	1.556E-07	97.1
150	Ca+2	9.407E-06	1.8	0.000E-01	0.0	4.998E-04	98.2
470	Mn+2	6.300E-08	0.4	0.000E-01	0.0	1.434E-05	99.6
140	CO3-2	5.869E-02	98.9	0.000E-01	0.0	6.245E-04	1.1

Charge Balance: SPECIATED

Sum of CATIONS = 6.266E-03 Sum of ANIONS 6.766E-02

PERCENT DIFFERENCE = 8.305E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 4.365E-02

EQUILIBRIUM pH = 9.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 8493697

```
                              PART 1 of OUTPUT FILE
 PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 25-FEB-93  TIME:  9:49: 6
```

9021c40 - sweep pH from 6.5 through 9 at fixed pCO_2

```
--------------------------------------------------------------------------------
 Temperature (Celsius):  25.00
 Units of concentration: MG/L
 Ionic strength to be computed.
 If specified, carbonate concentration represents total inorganic carbon.
 Do not automatically terminate if charge imbalance exceeds 30%
 Precipitation is allowed for all solids in the thermodynamic database and
   the print option for solids is set to: 1
 The maximum number of iterations is: 200
 The method used to compute activity coefficients is: Davies equation
 Intermediate output file
--------------------------------------------------------------------------------
```



```
                              PART 1 of OUTPUT FILE
 PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 25-FEB-93  TIME:  9:49:19
```



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--------------------------------------------------------------------------------

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
----------- THE INPUT DATA WILL BE USED IN A SERIES OF  6 SWEEPS ------------
  The input parameters for each sweep will be identical to this initial
  listing except that:
  --  The fixed equilibrium pH in successive sweeps will be:
        6.50    7.00    7.50    8.00    8.50    9.00

  --  After the first sweep, the initial component activity guesses
      for each successive sweep are the equilibrium activities computed at the
      end of the sweep which precedes it.

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
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INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.000E-02	-2.000	0.000E-01
30	Al+3	1.000E-02	-2.000	1.160E-01
160	Cd+2	1.000E-01	-1.000	1.080E+00
231	Cu+2	1.000E+00	0.000	1.780E+01
150	Ca+2	1.000E+01	1.000	5.420E+02
281	Fe+3	1.000E-02	-2.000	1.590E-01
600	Pb+2	1.000E-02	-2.000	1.930E-01
460	Mg+2	1.000E+01	1.000	3.450E+02
470	Mn+2	1.000E+01	1.000	3.920E+02
410	K+1	1.000E+00	0.000	3.130E+01
500	Na+1	1.000E+01	1.000	2.050E+02
950	Zn+2	1.000E+01	1.000	3.710E+02
732	SO4-2	1.000E+02	2.000	2.850E+03
580	PO4-3	1.000E-03	-3.000	6.400E-02
492	NO3-1	1.000E+00	0.000	8.700E+01
270	F-1	1.000E-01	-1.000	3.160E+00
180	Cl-1	1.000E+00	0.000	3.650E+01
140	CO3-2	1.000E-02	-2.000	0.000E-01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 9.182E-02 Sum of ANIONS = 6.224E-02

PERCENT DIFFERENCE = 1.920E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	1.431E-06	-5.845	-5.880	38.690
7047001	MNHPO4(C)	6.765E-07	-6.170	25.400	0.000
2023101	TENORITE	2.624E-04	-3.581	-7.620	15.240
5016000	OTAVITE	5.592E-06	-5.252	13.740	0.580
4215000	FLUORITE	2.680E-05	-4.572	10.949	-4.710
2003001	BOEHMITE	3.475E-06	-5.459	-8.578	28.130
6015001	GYPSUM	3.946E-03	-2.404	4.848	-0.261
5047000	RHODOCHROSIT	2.946E-04	-3.531	10.410	2.079

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	98.9	PERCENT BOUND IN SPECIES #	180	Cl-1
Na+1	97.3	PERCENT BOUND IN SPECIES #	500	Na+1
2.7	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	96.2	PERCENT BOUND IN SPECIES #	410	K+1
3.8	PERCENT BOUND IN SPECIES #4107320	KSO4 -		
Ca+2	70.4	PERCENT BOUND IN SPECIES #	150	Ca+2
29.5	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
Zn+2	64.3	PERCENT BOUND IN SPECIES #	950	Zn+2
31.1	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ		
3.8	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2		
Pb+2	40.2	PERCENT BOUND IN SPECIES #	600	Pb+2
1.2	PERCENT BOUND IN SPECIES #6003300	PbOH +		
46.6	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ		
5.3	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
3.7	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2		
2.0	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +		
Mg+2	73.0	PERCENT BOUND IN SPECIES #	460	Mg+2
26.8	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
Mn+2	72.6	PERCENT BOUND IN SPECIES #	470	Mn+2
27.2	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
PO4-3	44.2	PERCENT BOUND IN SPECIES #3305801		H2PO4 -
5.6	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +		
19.5	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ		
9.3	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ		
2.9	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +		
18.1	PERCENT BOUND IN SPECIES #3305800	HPO4 -2		
Cu+2	62.9	PERCENT BOUND IN SPECIES #	231	Cu+2
2.6	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ		
4.8	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
26.4	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ		
2.0	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +		
Fe+3	96.9	PERCENT BOUND IN SPECIES #2813301		FeOH2 +
2.8	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ		
SO4-2	57.4	PERCENT BOUND IN SPECIES #	732	SO4-2
14.8	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
11.0	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
7.2	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
6.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ		
1.7	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2		
H+1	2.0	PERCENT BOUND IN SPECIES #4601401		MgHCO3 +
1.1	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +		

	1.5	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +
	7.0	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	43.1	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	47.0	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
Cd+2	57.4	PERCENT BOUND IN SPECIES # 160	Cd+2
	2.1	PERCENT BOUND IN SPECIES #1601800	CdCl +
	34.1	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	5.7	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2
F-1	74.7	PERCENT BOUND IN SPECIES # 270	F-1
	19.4	PERCENT BOUND IN SPECIES #4602700	MgF +
	1.7	PERCENT BOUND IN SPECIES #1502700	CaF +
	1.5	PERCENT BOUND IN SPECIES #9502700	ZnF +
Al+3	1.4	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	1.8	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	2.6	PERCENT BOUND IN SPECIES # 302700	AlF +2
	45.0	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	42.8	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	1.9	PERCENT BOUND IN SPECIES # 302703	AlF4 -
	4.4	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
H2O	1.2	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
	2.2	PERCENT BOUND IN SPECIES #4703300	MnOH +
	1.9	PERCENT BOUND IN SPECIES #2313300	CuOH +
	19.1	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
	68.2	PERCENT BOUND IN SPECIES #9503300	ZnOH +
	3.8	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ
	1.3	PERCENT BOUND IN SPECIES #9501804	ZnOHCl AQ
CO3-2	2.5	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	1.4	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	1.9	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +
	8.7	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	1.7	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ
	53.9	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	29.4	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.035E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.961E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.410E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.044E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	9.616E-03	70.8	0.000E-01	0.0	3.973E-03	29.2
950	Zn+2	5.704E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	9.361E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	1.426E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	6.875E-03	95.9	0.000E-01	0.0	2.953E-04	4.1
580	PO4-3	6.922E-10	0.1	0.000E-01	0.0	6.765E-07	99.9
231	Cu+2	1.765E-05	6.3	0.000E-01	0.0	2.638E-04	93.7
281	Fe+3	1.200E-13	0.0	0.000E-01	0.0	2.861E-06	100.0
732	SO4-2	2.587E-02	86.8	0.000E-01	0.0	3.946E-03	13.2
330	H+1	4.143E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	4.064E-06	42.1	0.000E-01	0.0	5.592E-06	57.9
270	F-1	1.135E-04	67.9	0.000E-01	0.0	5.360E-05	32.1
30	Al+3	8.453E-07	19.6	0.000E-01	0.0	3.475E-06	80.4
2	H2O	8.940E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	3.315E-04	52.5	0.000E-01	0.0	3.002E-04	47.5

Charge Balance: SPECIATED

Sum of CATIONS = 6.129E-02 Sum of ANIONS 3.311E-02

PERCENT DIFFERENCE = 2.985E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 8.812E-02

EQUILIBRIUM pH = 6.500

DATE ID NUMBER: 930225
TIME ID NUMBER: 9511939

!!!
*** This is the beginning of SWEEP NUMBER 2 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 7.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	1.431E-06	-5.845	-5.880	38.690
7047001	MNHPO4(C)	3.308E-07	-6.480	25.400	0.000
2023101	TENORITE	2.770E-04	-3.558	-7.620	15.240
5016000	OTAVITE	9.226E-06	-5.035	13.740	0.580
4215000	FLUORITE	2.569E-05	-4.590	10.949	-4.710
2003001	BOEHMITE	4.202E-06	-5.377	-8.578	28.130
6015001	GYPSUM	5.250E-03	-2.280	4.848	-0.261
5047000	RHODOCHROSIT	6.481E-03	-2.188	10.410	2.079
5095001	ZNCO3, 1H2O	4.557E-03	-2.341	10.260	0.000
7060001	CLPYROMORPH	1.140E-07	-6.943	84.430	0.000

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	99.8	PERCENT BOUND IN SPECIES #	180	Cl-1
Na+1	96.8	PERCENT BOUND IN SPECIES #	500	Na+1
3.2	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	95.6	PERCENT BOUND IN SPECIES #	410	K+1
4.4	PERCENT BOUND IN SPECIES #4107320	KSO4 -		
Ca+2	65.5	PERCENT BOUND IN SPECIES #	150	Ca+2
34.3	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
Mg+2	68.4	PERCENT BOUND IN SPECIES #	460	Mg+2
31.3	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
Pb+2	23.3	PERCENT BOUND IN SPECIES #	600	Pb+2
2.3	PERCENT BOUND IN SPECIES #6003300	PbOH +		
33.7	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ		
33.2	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
2.9	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2		
3.9	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +		
Zn+2	57.7	PERCENT BOUND IN SPECIES #	950	Zn+2
34.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ		
4.7	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2		
1.5	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +		
Mn+2	67.8	PERCENT BOUND IN SPECIES #	470	Mn+2
31.7	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
Fe+3	90.6	PERCENT BOUND IN SPECIES #2813301		FeOH2 +
8.3	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ		
1.1	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		
H+1	3.1	PERCENT BOUND IN SPECIES #4601401		MgHCO3 +
1.6	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +		
2.2	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +		
69.1	PERCENT BOUND IN SPECIES #3301400	HCO3 -		
24.3	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ		
Cu+2	33.9	PERCENT BOUND IN SPECIES #	231	Cu+2
14.9	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ		
1.7	PERCENT BOUND IN SPECIES #2313300	CuOH +		
27.9	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
17.8	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ		
3.5	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +		
Cd+2	50.9	PERCENT BOUND IN SPECIES #	160	Cd+2
2.0	PERCENT BOUND IN SPECIES #1601800	CdCl +		
37.7	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ		
1.3	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +		
1.0	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ		
6.8	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2		

F-1	77.8	PERCENT BOUND IN SPECIES # 270	F-1
20.1	PERCENT BOUND IN SPECIES #4602700	MgF +	
1.5	PERCENT BOUND IN SPECIES #1502700	CaF +	
Al+3	3.2	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
40.2	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
11.7	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
12.2	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ	
31.5	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
SO4-2	66.0	PERCENT BOUND IN SPECIES # 732	SO4-2
18.1	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
11.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.2	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
1.6	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
CO3-2	3.5	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
1.7	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +	
2.4	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
1.5	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ	
76.5	PERCENT BOUND IN SPECIES #3301400	HCO3 -	
13.5	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	
H2O	1.9	PERCENT BOUND IN SPECIES #3300020	OH-
1.2	PERCENT BOUND IN SPECIES #4603300	MgOH +	
2.8	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
1.7	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
25.4	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
54.2	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
9.8	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ	
1.1	PERCENT BOUND IN SPECIES #9501804	ZnOHCl AQ	
PO4-3	22.3	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
2.8	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +	
31.7	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ	
13.0	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ	
1.2	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +	
27.4	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	C1-1	1.034E-03	100.0	0.000E-01	0.0	1.140E-07	0.0
500	Na+1	8.961E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.410E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.044E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	8.312E-03	61.2	0.000E-01	0.0	5.276E-03	38.8
460	Mg+2	1.426E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	3.659E-07	39.1	0.000E-01	0.0	5.702E-07	60.9
950	Zn+2	1.147E-03	20.1	0.000E-01	0.0	4.557E-03	79.9
470	Mn+2	6.892E-04	9.6	0.000E-01	0.0	6.481E-03	90.4
281	Fe+3	3.998E-14	0.0	0.000E-01	0.0	2.861E-06	100.0
330	H+1	8.042E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	3.065E-06	1.1	0.000E-01	0.0	2.784E-04	98.9
160	Cd+2	4.296E-07	4.4	0.000E-01	0.0	9.226E-06	95.6
270	F-1	1.158E-04	69.3	0.000E-01	0.0	5.138E-05	30.7
30	A1+3	1.180E-07	2.7	0.000E-01	0.0	4.202E-06	97.3
732	SO4-2	2.456E-02	82.4	0.000E-01	0.0	5.250E-03	17.6
140	CO3-2	7.265E-04	6.2	0.000E-01	0.0	1.105E-02	93.8
2	H2O	6.740E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	4.274E-09	0.6	0.000E-01	0.0	6.729E-07	99.4

Charge Balance: SPECIATED

Sum of CATIONS = 4.219E-02 Sum of ANIONS 3.594E-02

PERCENT DIFFERENCE = 8.006E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.165E-02

EQUILIBRIUM pH = 7.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 9515927

!!

*** This is the beginning of SWEEP NUMBER 3 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 7.50
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	1.431E-06	-5.845	-5.880	38.690
5095001	ZNCO3, 1H2O	5.548E-03	-2.256	10.260	0.000
2023101	TENORITE	2.785E-04	-3.555	-7.620	15.240
5016000	OTAVITE	9.597E-06	-5.018	13.740	0.580
4215000	FLUORITE	2.047E-05	-4.689	10.949	-4.710
2003001	BOEHMITE	4.131E-06	-5.384	-8.578	28.130
7015002	FCO3APATITE	1.408E-07	-6.851	114.400	-39.390
5047000	RHODOCHROSIT	7.091E-03	-2.149	10.410	2.079
5015002	DOLOMITE	7.344E-03	-2.134	17.000	8.290

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
Na+1	95.3	PERCENT BOUND IN SPECIES #	500	Na+1
4.6	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	93.7	PERCENT BOUND IN SPECIES #	410	K+1
6.3	PERCENT BOUND IN SPECIES #4107320	KSO4 -		
Ca+2	55.9	PERCENT BOUND IN SPECIES #	150	Ca+2
43.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
SO4-2	79.7	PERCENT BOUND IN SPECIES #	732	SO4-2
9.3	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
9.1	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
1.4	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
Pb+2	5.3	PERCENT BOUND IN SPECIES #	600	Pb+2
1.7	PERCENT BOUND IN SPECIES #6003300	PbOH +		
11.4	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ		
76.2	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
1.4	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2		
2.8	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +		
Mg+2	59.1	PERCENT BOUND IN SPECIES #	460	Mg+2
40.2	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
Zn+2	42.3	PERCENT BOUND IN SPECIES #	950	Zn+2
37.9	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ		
7.4	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2		
3.5	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +		
7.0	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ		
Fe+3	71.0	PERCENT BOUND IN SPECIES #2813301		FeOH2 +
20.7	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ		
8.3	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		
H+1	1.7	PERCENT BOUND IN SPECIES #4601401		MgHCO3 +
1.3	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +		
87.0	PERCENT BOUND IN SPECIES #3301400	HCO3 -		
9.7	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ		
Cu+2	6.7	PERCENT BOUND IN SPECIES #	231	Cu+2
29.5	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ		
1.1	PERCENT BOUND IN SPECIES #2313300	CuOH +		
55.2	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
5.2	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ		
2.2	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +		
Al+3	78.9	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -
19.6	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ		
Cd+2	36.7	PERCENT BOUND IN SPECIES #	160	Cd+2
1.5	PERCENT BOUND IN SPECIES #1601800	CdCl +		

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          40.4     PERCENT BOUND IN SPECIES #1607320   CdSO4 AQ
           3.1     PERCENT BOUND IN SPECIES #1601400   CdHCO3 +
           7.6     PERCENT BOUND IN SPECIES #1601401   CdCO3 AQ
          10.7     PERCENT BOUND IN SPECIES #1607321   Cd(SO4)2-2

PO4-3                11.9     PERCENT BOUND IN SPECIES #3305801   H2PO4 -
           2.1     PERCENT BOUND IN SPECIES #4605800   MgPO4 -
          22.7     PERCENT BOUND IN SPECIES #4605802   MgHPO4 AQ
          14.2     PERCENT BOUND IN SPECIES #1505800   CaHPO4 AQ
           1.4     PERCENT BOUND IN SPECIES #1505801   CaPO4 -
          46.2     PERCENT BOUND IN SPECIES #3305800   HPO4 -2

H2O                   8.2     PERCENT BOUND IN SPECIES #3300020   OH-
           2.2     PERCENT BOUND IN SPECIES #4603300   MgOH +
          12.4     PERCENT BOUND IN SPECIES # 303302   Al(OH)4 -
           2.3     PERCENT BOUND IN SPECIES # 303303   Al(OH)3 AQ
          35.4     PERCENT BOUND IN SPECIES #2313301   Cu(OH)2 AQ
          23.9     PERCENT BOUND IN SPECIES #9503300   ZnOH +
          13.6     PERCENT BOUND IN SPECIES #9503301   Zn(OH)2 AQ

F-1                  89.1     PERCENT BOUND IN SPECIES #    270   F-1
           9.7     PERCENT BOUND IN SPECIES #4602700   MgF +
           1.1     PERCENT BOUND IN SPECIES #1502700   CaF +

Mn+2                 58.4     PERCENT BOUND IN SPECIES #    470   Mn+2
          40.6     PERCENT BOUND IN SPECIES #4707320   MnSO4 AQ

CO3-2                 1.7     PERCENT BOUND IN SPECIES #4601401   MgHCO3 +
           1.3     PERCENT BOUND IN SPECIES #1501400   CaHCO3 +
          90.0     PERCENT BOUND IN SPECIES #3301400   HCO3 -
           5.0     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.035E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.960E-03	100.0	0.000E-01	0.0	5.069E-08	0.0
492	NO3-1	1.410E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.044E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	6.223E-03	45.8	0.000E-01	0.0	7.366E-03	54.2
732	SO4-2	2.981E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	9.361E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	6.916E-03	48.5	0.000E-01	0.0	7.344E-03	51.5
950	Zn+2	1.551E-04	2.7	0.000E-01	0.0	5.548E-03	97.3
281	Fe+3	1.610E-14	0.0	0.000E-01	0.0	2.861E-06	100.0
330	H+1	2.017E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	1.551E-06	0.6	0.000E-01	0.0	2.799E-04	99.4
30	Al+3	1.897E-07	4.4	0.000E-01	0.0	4.131E-06	95.6
160	Cd+2	5.922E-08	0.6	0.000E-01	0.0	9.597E-06	99.4
580	PO4-3	1.383E-09	0.2	0.000E-01	0.0	6.758E-07	99.8
2	H2O	4.829E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	1.259E-04	75.3	0.000E-01	0.0	4.128E-05	24.7
470	Mn+2	7.942E-05	1.1	0.000E-01	0.0	7.091E-03	98.9
140	CO3-2	1.951E-03	6.7	0.000E-01	0.0	2.734E-02	93.3

Charge Balance: SPECIATED

Sum of CATIONS = 2.474E-02 Sum of ANIONS 5.230E-02

PERCENT DIFFERENCE = 3.577E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 6.997E-02

EQUILIBRIUM pH = 7.500

DATE ID NUMBER: 930225
TIME ID NUMBER: 9532435

!!
*** This is the beginning of SWEEP NUMBER 4 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 8.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	1.431E-06	-5.845	-5.880	38.690
5095001	ZNCO3, 1H2O	5.663E-03	-2.247	10.260	0.000
2023101	TENORITE	2.787E-04	-3.555	-7.620	15.240
5016000	OTAVITE	9.645E-06	-5.016	13.740	0.580
5015002	DOLOMITE	1.313E-02	-1.882	17.000	8.290
2003001	BOEHMITE	3.811E-06	-5.419	-8.578	28.130
7015002	FCO3APATITE	9.879E-08	-7.005	114.400	-39.390
5047000	RHODOCHROSIT	7.162E-03	-2.145	10.410	2.079
7060001	CLPYROMORPH	5.934E-08	-7.227	84.430	0.000

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
Na+1	94.3	PERCENT BOUND IN SPECIES # 500	Na+1
5.5	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
K+1	92.4	PERCENT BOUND IN SPECIES # 410	K+1
7.6	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
Ca+2	50.3	PERCENT BOUND IN SPECIES # 150	Ca+2
1.2	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +	
47.9	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
SO4-2	95.7	PERCENT BOUND IN SPECIES # 732	SO4-2
1.7	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
1.7	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Pb+2	11.0	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2
1.5	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
85.0	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ	
CO3-2	95.9	PERCENT BOUND IN SPECIES #3301400	HCO3 -
1.7	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	
Al+3	92.6	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
7.3	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
Zn+2	16.1	PERCENT BOUND IN SPECIES # 950	Zn+2
17.6	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
4.2	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
4.3	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
26.7	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ	
29.4	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2	
Fe+3	32.3	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
29.8	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ	
37.9	PERCENT BOUND IN SPECIES #2813303	FeOH4 -	
H+1	96.0	PERCENT BOUND IN SPECIES #3301400	HCO3 -
3.4	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	
Cu+2	33.2	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
2.2	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2	
62.1	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
Cd+2	19.3	PERCENT BOUND IN SPECIES # 160	Cd+2
26.1	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
5.1	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +	
40.3	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ	
8.3	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Mg+2	53.4	PERCENT BOUND IN SPECIES # 460	Mg+2
1.4	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +	
44.5	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	

H2O		20.7	PERCENT BOUND IN SPECIES #3300020	OH-
	31.1	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
	1.8	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
	28.2	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
	6.0	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
	10.8	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ	
F-1		98.2	PERCENT BOUND IN SPECIES # 270	F-1
	1.6	PERCENT BOUND IN SPECIES #4602700	MgF +	
Mn+2		52.7	PERCENT BOUND IN SPECIES # 470	Mn+2
	44.9	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
	2.2	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +	
PO4-3		6.8	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	1.8	PERCENT BOUND IN SPECIES #4605800	MgPO4 -	
	6.1	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ	
	1.7	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ	
	82.4	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.035E-03	100.0	0.000E-01	0.0	5.934E-08	0.0
500	Na+1	8.961E-03	100.0	0.000E-01	0.0	3.557E-08	0.0
492	NO3-1	1.410E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.044E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	4.595E-04	3.4	0.000E-01	0.0	1.313E-02	96.6
732	SO4-2	2.981E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	6.365E-07	68.2	0.000E-01	0.0	2.967E-07	31.8
140	CO3-2	5.772E-03	12.9	0.000E-01	0.0	3.909E-02	87.1
30	Al+3	5.098E-07	11.8	0.000E-01	0.0	3.811E-06	88.2
950	Zn+2	4.049E-05	0.7	0.000E-01	0.0	5.663E-03	99.3
281	Fe+3	1.116E-14	0.0	0.000E-01	0.0	2.861E-06	100.0
330	H+1	5.767E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	1.379E-06	0.5	0.000E-01	0.0	2.801E-04	99.5
160	Cd+2	1.114E-08	0.1	0.000E-01	0.0	9.645E-06	99.9
460	Mg+2	1.131E-03	7.9	0.000E-01	0.0	1.313E-02	92.1
2	H2O	6.066E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	1.669E-04	99.9	0.000E-01	0.0	2.450E-07	0.1
470	Mn+2	8.724E-06	0.1	0.000E-01	0.0	7.162E-03	99.9
580	PO4-3	2.496E-08	3.7	0.000E-01	0.0	6.522E-07	96.3

Charge Balance: SPECIATED

Sum of CATIONS = 1.091E-02 Sum of ANIONS 6.588E-02

PERCENT DIFFERENCE = 7.158E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 6.783E-02

EQUILIBRIUM pH = 8.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 9540252

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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
*** This is the beginning of SWEEP NUMBER  5 in the series of  6 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    8.50
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	1.431E-06	-5.845	-5.880	38.690
5095001	ZNCO3, 1H2O	5.567E-03	-2.254	10.260	0.000
2023101	TENORITE	2.784E-04	-3.555	-7.620	15.240
5016000	OTAVITE	9.650E-06	-5.015	13.740	0.580
5015002	DOLOMITE	1.356E-02	-1.868	17.000	8.290
2003001	BOEHMITE	2.779E-06	-5.556	-8.578	28.130
7060001	CLPYROMORPH	1.517E-08	-7.819	84.430	0.000
5047000	RHODOCHROSIT	7.169E-03	-2.145	10.410	2.079
5046002	MAGNESITE	4.746E-04	-3.324	8.029	6.169

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
Na+1	93.6	PERCENT BOUND IN SPECIES #	500	Na+1
5.4	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	92.5	PERCENT BOUND IN SPECIES #	410	K+1
7.5	PERCENT BOUND IN SPECIES #4107320	KSO4 -		
F-1	99.6	PERCENT BOUND IN SPECIES #	270	F-1
SO4-2	97.8	PERCENT BOUND IN SPECIES #	732	SO4-2
1.6	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
Pb+2	57.0	PERCENT BOUND IN SPECIES #6001400		Pb(CO3)2-2
42.6	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
Ca+2	47.5	PERCENT BOUND IN SPECIES #	150	Ca+2
3.4	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +		
5.4	PERCENT BOUND IN SPECIES #1501401	CaCO3 AQ		
43.5	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
Al+3	97.6	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -
2.4	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ		
Cu+2	28.1	PERCENT BOUND IN SPECIES #2311400		CuCO3 AQ
18.8	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2		
52.6	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
Fe+3	6.4	PERCENT BOUND IN SPECIES #2813301		FeOH2 +
18.5	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ		
75.1	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		
Zn+2	7.9	PERCENT BOUND IN SPECIES #9501401		ZnCO3 AQ
90.2	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2		
H+1	98.6	PERCENT BOUND IN SPECIES #3301400		HCO3 -
1.1	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ		
Cd+2	4.2	PERCENT BOUND IN SPECIES #	160	Cd+2
5.4	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ		
3.5	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +		
84.9	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ		
1.8	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2		
CO3-2	2.8	PERCENT BOUND IN SPECIES #	140	CO3-2
1.3	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2		
94.7	PERCENT BOUND IN SPECIES #3301400	HCO3 -		
H2O	31.6	PERCENT BOUND IN SPECIES #3300020		OH-
47.6	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -		
13.5	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
5.2	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ		

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PO4-3                    2.4     PERCENT BOUND IN SPECIES #3305801   H2PO4 -
                 1.2     PERCENT BOUND IN SPECIES #4605800   MgPO4 -
                 1.2     PERCENT BOUND IN SPECIES #4605802   MgHPO4 AQ
                94.3     PERCENT BOUND IN SPECIES #3305800   HPO4 -2

Mn+2                    51.2     PERCENT BOUND IN SPECIES #    470   Mn+2
                41.9     PERCENT BOUND IN SPECIES #4707320   MnSO4 AQ
                 6.7     PERCENT BOUND IN SPECIES #4701400   MnHCO3 +

Mg+2                    51.0     PERCENT BOUND IN SPECIES #    460   Mg+2
                 3.9     PERCENT BOUND IN SPECIES #4601400   MgCO3 AQ
                 4.1     PERCENT BOUND IN SPECIES #4601401   MgHCO3 +
                40.7     PERCENT BOUND IN SPECIES #4607320   MgSO4 AQ
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.035E-03	100.0	0.000E-01	0.0	1.517E-08	0.0
500	Na+1	8.961E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.410E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.044E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	1.671E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.981E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	8.602E-07	91.9	0.000E-01	0.0	7.586E-08	8.1
150	Ca+2	2.740E-05	0.2	0.000E-01	0.0	1.356E-02	99.8
30	Al+3	1.542E-06	35.7	0.000E-01	0.0	2.779E-06	64.3
231	Cu+2	1.625E-06	0.6	0.000E-01	0.0	2.799E-04	99.4
281	Fe+3	1.793E-14	0.0	0.000E-01	0.0	2.861E-06	100.0
950	Zn+2	1.362E-04	2.4	0.000E-01	0.0	5.567E-03	97.6
330	H+1	1.789E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	5.280E-09	0.1	0.000E-01	0.0	9.650E-06	99.9
140	CO3-2	1.863E-02	31.6	0.000E-01	0.0	4.034E-02	68.4
2	H2O	1.265E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	6.317E-07	93.3	0.000E-01	0.0	4.552E-08	6.7
470	Mn+2	9.265E-07	0.0	0.000E-01	0.0	7.169E-03	100.0
460	Mg+2	2.237E-04	1.6	0.000E-01	0.0	1.404E-02	98.4

Charge Balance: SPECIATED

Sum of CATIONS = 9.403E-03 Sum of ANIONS 8.046E-02

PERCENT DIFFERENCE = 7.907E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.487E-02

EQUILIBRIUM pH = 8.500

DATE ID NUMBER: 930225
TIME ID NUMBER: 9544058

!!
*** This is the beginning of SWEEP NUMBER 6 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 9.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	1.431E-06	-5.845	-5.880	38.690
5095001	ZNCO3, 1H2O	4.313E-03	-2.365	10.260	0.000
2023101	TENORITE	2.753E-04	-3.560	-7.620	15.240
5016000	OTAVITE	9.651E-06	-5.015	13.740	0.580
5015002	DOLOMITE	1.358E-02	-1.867	17.000	8.290
5047000	RHODOCHROSIT	7.170E-03	-2.144	10.410	2.079
5046002	MAGNESITE	6.425E-04	-3.192	8.029	6.169

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
Na+1	90.2	PERCENT BOUND IN SPECIES #	500	Na+1
3.5	PERCENT BOUND IN SPECIES #5001400	NaCO3 -		
1.7	PERCENT BOUND IN SPECIES #5001401	NaHCO3 AQ		
4.7	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
K+1	93.2	PERCENT BOUND IN SPECIES #	410	K+1
6.8	PERCENT BOUND IN SPECIES #4107320	KSO4 -		
F-1	99.9	PERCENT BOUND IN SPECIES #	270	F-1
SO4-2	98.4	PERCENT BOUND IN SPECIES #	732	SO4-2
1.4	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
Pb+2	93.8	PERCENT BOUND IN SPECIES #6001400		Pb(CO3)2-2
6.2	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
PO4-3	98.0	PERCENT BOUND IN SPECIES #3305800		HPO4 -2
Al+3	99.3	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -
Ca+2	33.9	PERCENT BOUND IN SPECIES #	150	Ca+2
7.1	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +		
34.4	PERCENT BOUND IN SPECIES #1501401	CaCO3 AQ		
24.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
Zn+2	99.2	PERCENT BOUND IN SPECIES #9501402		Zn(CO3)2-2
Cu+2	9.6	PERCENT BOUND IN SPECIES #2311400		CuCO3 AQ
72.5	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2		
17.9	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
Fe+3	6.9	PERCENT BOUND IN SPECIES #2813302		FeOH3 AQ
92.3	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		
H+1	99.5	PERCENT BOUND IN SPECIES #3301400		HCO3 -
H2O	39.8	PERCENT BOUND IN SPECIES #3300020		OH-
52.5	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -		
5.2	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
2.0	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ		
Cd+2	1.3	PERCENT BOUND IN SPECIES #1601400		CdHCO3 +
97.2	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ		
CO3-2	8.8	PERCENT BOUND IN SPECIES #	140	CO3-2
4.1	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2		
86.2	PERCENT BOUND IN SPECIES #3301400	HCO3 -		
Mn+2	49.0	PERCENT BOUND IN SPECIES #	470	Mn+2
31.8	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
18.5	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +		

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Mg+2                    39.2     PERCENT BOUND IN SPECIES #    460   Mg+2
      26.6      PERCENT BOUND IN SPECIES #4601400   MgCO3 AQ
       9.2      PERCENT BOUND IN SPECIES #4601401   MgHCO3 +
      24.8      PERCENT BOUND IN SPECIES #4607320   MgSO4 AQ
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
180	Cl-1	1.035E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.961E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.410E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.044E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	1.671E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	2.981E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	9.361E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	6.772E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	4.320E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	4.313E-06	0.0	0.000E-01	0.0	1.358E-02	100.0
950	Zn+2	1.391E-03	24.4	0.000E-01	0.0	4.313E-03	75.6
231	Cu+2	4.740E-06	1.7	0.000E-01	0.0	2.767E-04	98.3
281	Fe+3	4.748E-14	0.0	0.000E-01	0.0	2.861E-06	100.0
330	H+1	5.775E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	3.267E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	4.577E-09	0.0	0.000E-01	0.0	9.651E-06	100.0
140	CO3-2	6.666E-02	62.9	0.000E-01	0.0	3.930E-02	37.1
470	Mn+2	1.085E-07	0.0	0.000E-01	0.0	7.170E-03	100.0
460	Mg+2	3.268E-05	0.2	0.000E-01	0.0	1.423E-02	99.8

Charge Balance: SPECIATED

Sum of CATIONS = 8.862E-03 Sum of ANIONS 1.340E-01

PERCENT DIFFERENCE = 8.760E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.080E-01

EQUILIBRIUM pH = 9.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 9551788

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________________________________________________________________________________
____________________________PART 1 of OUTPUT FILE_______________________________
 PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 25-FEB-93  TIME: 16:26:52


9233c40 - pH sweep from 3 to 9 with fixed pCO2


--------------------------------------------------------------------------------
 Temperature (Celsius):  25.00
 Units of concentration: MG/L
 Ionic strength to be computed.
 If specified, carbonate concentration represents total inorganic carbon.
 Do not automatically terminate if charge imbalance exceeds 30%
 Precipitation is allowed for all solids in the thermodynamic database and
   the print option for solids is set to: 1
 The maximum number of iterations is: 200
 The method used to compute activity coefficients is: Davies equation
 Intermediate output file

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________________________________________________________________________________
____________________________PART 1 of OUTPUT FILE_______________________________
 PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 25-FEB-93  TIME: 16:27: 5


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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
----------- THE INPUT DATA WILL BE USED IN A SERIES OF  7 SWEEPS ------------
  The input parameters for each sweep will be identical to this initial
  listing except that:
  --  The fixed equilibrium pH in successive sweeps will be:
        3.00    4.00    5.00    6.00    7.00    8.00
        9.00
  --  After the first sweep, the initial component activity guesses
      for each successive sweep are the equilibrium activities computed at the
      end of the sweep which precedes it.

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INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.000E-03	-3.000	0.000E-01
30	Al+3	2.138E-06	-5.670	3.160E+01
160	Cd+2	1.950E-08	-7.710	1.330E+00
231	Cu+2	1.479E-07	-6.830	1.640E+02
150	Ca+2	3.548E-03	-2.450	3.890E+02
281	Fe+3	5.495E-07	-6.260	2.320E-01
460	Mg+2	8.511E-04	-3.070	2.010E+02
470	Mn+2	3.467E-08	-7.460	2.000E+02
410	K+1	1.778E-04	-3.750	3.370E+01
500	Na+1	5.248E-03	-2.280	2.010E+02
950	Zn+2	7.762E-06	-5.110	2.700E+02
61	H3AsO4	1.318E-07	-6.880	2.000E-03
732	SO4-2	5.370E-03	-2.270	3.100E+03
580	PO4-3	3.981E-06	-5.400	1.200E-01
492	NO3-1	9.772E-06	-5.010	9.900E+00
270	F-1	2.399E-04	-3.620	8.000E+00
180	Cl-1	1.288E-03	-2.890	4.300E+01
600	Pb+2	3.802E-07	-6.420	7.880E-02
140	CO3-2	1.000E-16	-16.000	0.000E-01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 7.013E-02 Sum of ANIONS = 6.665E-02

PERCENT DIFFERENCE = 2.545E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	4.196E-06	-5.377	3.040	0.000
6015001	GYPSUM	1.848E-03	-2.733	4.848	-0.261

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Pb+2	36.7	PERCENT BOUND IN SPECIES # 600	Pb+2
56.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
5.7	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2	
Al+3	24.1	PERCENT BOUND IN SPECIES # 30	Al+3
29.5	PERCENT BOUND IN SPECIES # 302700	AlF +2	
3.1	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
27.3	PERCENT BOUND IN SPECIES # 307320	AlSO4 +	
15.8	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -	
Cd+2	49.8	PERCENT BOUND IN SPECIES # 160	Cd+2
2.2	PERCENT BOUND IN SPECIES #1601800	CdCl +	
39.6	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
8.4	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	63.9	PERCENT BOUND IN SPECIES # 231	Cu+2
36.0	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
Ca+2	64.0	PERCENT BOUND IN SPECIES # 150	Ca+2
36.0	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Fe+3	6.8	PERCENT BOUND IN SPECIES # 281	Fe+3
13.4	PERCENT BOUND IN SPECIES #2813300	FeOH +2	
61.6	PERCENT BOUND IN SPECIES #2817320	FeSO4 +	
2.2	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
1.3	PERCENT BOUND IN SPECIES #2812700	FeF +2	
14.2	PERCENT BOUND IN SPECIES #2817321	Fe(SO4)2 -	
Mg+2	67.1	PERCENT BOUND IN SPECIES # 460	Mg+2
32.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+2	66.5	PERCENT BOUND IN SPECIES # 470	Mn+2
33.4	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
K+1	95.1	PERCENT BOUND IN SPECIES # 410	K+1
4.9	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
Na+1	96.5	PERCENT BOUND IN SPECIES # 500	Na+1
3.5	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	57.2	PERCENT BOUND IN SPECIES # 950	Zn+2
37.0	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
5.8	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
H3AsO4	11.9	PERCENT BOUND IN SPECIES # 61	H3AsO4
88.0	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
F-1	82.1	PERCENT BOUND IN SPECIES # 302700	AlF +2
17.4	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
PO4-3	81.4	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
8.8	PERCENT BOUND IN SPECIES #3305802	H3PO4	
5.7	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +	
4.1	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +	

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NO3-1                  100.0     PERCENT BOUND IN SPECIES #    492   NO3-1

SO4-2                   61.7     PERCENT BOUND IN SPECIES #    732   SO4-2
                 8.9   PERCENT BOUND IN SPECIES #4607320   MgSO4 AQ
                 9.3   PERCENT BOUND IN SPECIES #1507320   CaSO4 AQ
                 1.0   PERCENT BOUND IN SPECIES #5007320   NaSO4 -
                 1.1   PERCENT BOUND IN SPECIES # 307320   AlSO4 +
                 1.2   PERCENT BOUND IN SPECIES # 307321   Al(SO4)2 -
                 4.0   PERCENT BOUND IN SPECIES #4707320   MnSO4 AQ
                 3.1   PERCENT BOUND IN SPECIES #2317320   CuSO4 AQ
                 5.0   PERCENT BOUND IN SPECIES #9507320   ZnSO4 AQ
                 1.6   PERCENT BOUND IN SPECIES #9507321   Zn(SO4)2-2
                 2.9   PERCENT BOUND IN SPECIES #3307320   HSO4 -

Cl-1                    99.2     PERCENT BOUND IN SPECIES #    180   Cl-1

CO3-2                   99.9     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ

H+1                     53.7     PERCENT BOUND IN SPECIES #    330   H+1
                 8.3   PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ
                38.0   PERCENT BOUND IN SPECIES #3307320   HSO4 -

H2O                     98.0     PERCENT BOUND IN SPECIES # 303300   AlOH +2
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	1.177E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.189E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.593E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	7.904E-03	81.1	0.000E-01	0.0	1.848E-03	18.9
281	Fe+3	7.313E-09	0.2	0.000E-01	0.0	4.196E-06	99.8
460	Mg+2	8.306E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	3.657E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.659E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	4.150E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	4.230E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	1.269E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	3.057E-02	94.3	0.000E-01	0.0	1.848E-03	5.7
180	Cl-1	1.217E-03	99.9	0.000E-01	0.0	1.259E-06	0.1
140	CO3-2	9.768E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	2.363E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	8.979E-07	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 4.668E-02 Sum of ANIONS 4.104E-02

PERCENT DIFFERENCE = 6.428E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 8.127E-02

EQUILIBRIUM pH = 3.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 16273285

!!
*** This is the beginning of SWEEP NUMBER 2 in the series of 7 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 4.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

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Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	4.246E-06	-5.372	3.040	0.000
6015001	GYPSUM	2.076E-03	-2.683	4.848	-0.261
6041001	ALUNITE	2.930E-04	-3.533	1.346	-3.918
7047001	MNHPO4(C)	1.052E-06	-5.978	25.400	0.000

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Pb+2	35.5	PERCENT BOUND IN SPECIES # 600		Pb+2
	57.8	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
	6.0	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2	
Al+3	3.4	PERCENT BOUND IN SPECIES # 30		Al+3
	42.3	PERCENT BOUND IN SPECIES # 302700	AlF +2	
	45.0	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
	2.5	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ	
	4.1	PERCENT BOUND IN SPECIES # 307320	AlSO4 +	
	2.5	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -	
Cd+2	48.6	PERCENT BOUND IN SPECIES # 160		Cd+2
	2.2	PERCENT BOUND IN SPECIES #1601800	CdCl +	
	40.5	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
	8.7	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	62.8	PERCENT BOUND IN SPECIES # 231		Cu+2
	37.1	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
Ca+2	62.9	PERCENT BOUND IN SPECIES # 150		Ca+2
	37.1	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Fe+3	1.5	PERCENT BOUND IN SPECIES # 281		Fe+3
	29.6	PERCENT BOUND IN SPECIES #2813300	FeOH +2	
	14.2	PERCENT BOUND IN SPECIES #2817320	FeSO4 +	
	48.3	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
	2.8	PERCENT BOUND IN SPECIES #2812700	FeF +2	
	3.4	PERCENT BOUND IN SPECIES #2817321	Fe(SO4)2 -	
Mg+2	66.0	PERCENT BOUND IN SPECIES # 460		Mg+2
	34.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+2	65.4	PERCENT BOUND IN SPECIES # 470		Mn+2
	34.4	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492		NO3-1
Na+1	96.4	PERCENT BOUND IN SPECIES # 500		Na+1
	3.6	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	55.9	PERCENT BOUND IN SPECIES # 950		Zn+2
	37.9	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
	6.1	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
H3AsO4	1.3	PERCENT BOUND IN SPECIES # 61		H3AsO4
	98.3	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
F-1	1.2	PERCENT BOUND IN SPECIES # 270		F-1
	29.8	PERCENT BOUND IN SPECIES # 302700	AlF +2	
	63.3	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
	5.4	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ	
K+1	95.0	PERCENT BOUND IN SPECIES # 410		K+1
	5.0	PERCENT BOUND IN SPECIES #4107320	KSO4 -	

PO4-3	88.4	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	6.2	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +
	4.3	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +
CO3-2	99.2	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
Cl-1	99.2	PERCENT BOUND IN SPECIES # 180	Cl-1
SO4-2	64.9	PERCENT BOUND IN SPECIES # 732	SO4-2
	9.5	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
	9.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
	1.1	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
	4.2	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
	3.2	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
	5.3	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	1.7	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
H2O	71.2	PERCENT BOUND IN SPECIES # 303300	AlOH +2
	5.4	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	17.8	PERCENT BOUND IN SPECIES #2313300	CuOH +
	2.0	PERCENT BOUND IN SPECIES #2313304	Cu2(OH)2+2
	2.8	PERCENT BOUND IN SPECIES #9503300	ZnOH +
H+1	30.4	PERCENT BOUND IN SPECIES # 330	H+1
	47.0	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
	22.3	PERCENT BOUND IN SPECIES #3307320	HSO4 -

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	2.977E-04	25.3	0.000E-01	0.0	8.790E-04	74.7
160	Cd+2	1.189E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.593E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	7.676E-03	78.7	0.000E-01	0.0	2.076E-03	21.3
281	Fe+3	6.528E-11	0.0	0.000E-01	0.0	4.246E-06	100.0
460	Mg+2	8.306E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	3.656E-03	100.0	0.000E-01	0.0	1.052E-06	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	4.149E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	4.230E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.729E-04	66.2	0.000E-01	0.0	2.930E-04	33.8
580	PO4-3	2.179E-07	17.2	0.000E-01	0.0	1.052E-06	82.8
140	CO3-2	9.848E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.217E-03	99.9	0.000E-01	0.0	1.274E-06	0.1
732	SO4-2	2.976E-02	91.8	0.000E-01	0.0	2.662E-03	8.2
2	H2O	4.521E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	4.158E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 4.290E-02 Sum of ANIONS 4.097E-02

PERCENT DIFFERENCE = 2.304E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.833E-02

EQUILIBRIUM pH = 4.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 16280833

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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
*** This is the beginning of SWEEP NUMBER  3 in the series of  7 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    5.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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 Type IV - FINITE SOLIDS (present at equilibrium)
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ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	4.258E-06	-5.371	3.040	0.000
6015001	GYPSUM	2.092E-03	-2.679	4.848	-0.261
6041001	ALUNITE	3.370E-04	-3.472	1.346	-3.918
7047001	MNHPO4(C)	1.247E-06	-5.904	25.400	0.000

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Pb+2	35.4	PERCENT BOUND IN SPECIES #	600	Pb+2
	57.8	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
	6.0	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2	
Al+3	6.7	PERCENT BOUND IN SPECIES # 302700	AlF +2	
	62.0	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
	30.4	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ	
Cd+2	48.5	PERCENT BOUND IN SPECIES #	160	Cd+2
	2.2	PERCENT BOUND IN SPECIES #1601800	CdCl +	
	40.6	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
	8.7	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	62.6	PERCENT BOUND IN SPECIES #	231	Cu+2
	37.1	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
Ca+2	62.8	PERCENT BOUND IN SPECIES #	150	Ca+2
	37.2	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Fe+3	5.7	PERCENT BOUND IN SPECIES #2813300	FeOH +2	
	93.1	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
Mg+2	65.9	PERCENT BOUND IN SPECIES #	460	Mg+2
	34.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+2	65.3	PERCENT BOUND IN SPECIES #	470	Mn+2
	34.5	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
Na+1	96.4	PERCENT BOUND IN SPECIES #	500	Na+1
	3.6	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	55.8	PERCENT BOUND IN SPECIES #	950	Zn+2
	38.0	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
	6.1	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
H3AsO4	96.5	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
	3.4	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2	
F-1	10.1	PERCENT BOUND IN SPECIES #	270	F-1
	1.4	PERCENT BOUND IN SPECIES #4602700	MgF +	
	2.6	PERCENT BOUND IN SPECIES # 302700	AlF +2	
	48.5	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
	35.6	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ	
	1.0	PERCENT BOUND IN SPECIES # 302703	AlF4 -	
K+1	95.0	PERCENT BOUND IN SPECIES #	410	K+1
	5.0	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
PO4-3	87.4	PERCENT BOUND IN SPECIES #3305801	H2PO4 -	
	6.1	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +	
	4.2	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +	
	1.1	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	

CO3-2	1.6	PERCENT BOUND IN SPECIES	#2311402	CuHCO3 +
5.3	PERCENT BOUND IN SPECIES	#3301400	HCO3 -	
92.2	PERCENT BOUND IN SPECIES	#3301401	H2CO3 AQ	
Cl-1	99.2	PERCENT BOUND IN SPECIES	# 180	Cl-1
SO4-2	65.1	PERCENT BOUND IN SPECIES	# 732	SO4-2
9.5	PERCENT BOUND IN SPECIES	#4607320	MgSO4 AQ	
9.6	PERCENT BOUND IN SPECIES	#1507320	CaSO4 AQ	
1.1	PERCENT BOUND IN SPECIES	#5007320	NaSO4 -	
4.3	PERCENT BOUND IN SPECIES	#4707320	MnSO4 AQ	
3.2	PERCENT BOUND IN SPECIES	#2317320	CuSO4 AQ	
5.3	PERCENT BOUND IN SPECIES	#9507320	ZnSO4 AQ	
1.7	PERCENT BOUND IN SPECIES	#9507321	Zn(SO4)2-2	
H2O	1.5	PERCENT BOUND IN SPECIES	# 303300	AlOH +2
1.2	PERCENT BOUND IN SPECIES	# 303301	Al(OH)2 +	
37.2	PERCENT BOUND IN SPECIES	#2313300	CuOH +	
12.0	PERCENT BOUND IN SPECIES	#2313301	Cu(OH)2 AQ	
41.7	PERCENT BOUND IN SPECIES	#2313304	Cu2(OH)2+2	
5.8	PERCENT BOUND IN SPECIES	#9503300	ZnOH +	
H+1	5.6	PERCENT BOUND IN SPECIES	# 330	H+1
2.5	PERCENT BOUND IN SPECIES	#3301400	HCO3 -	
87.3	PERCENT BOUND IN SPECIES	#3301401	H2CO3 AQ	
4.1	PERCENT BOUND IN SPECIES	#3307320	HSO4 -	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	1.655E-04	14.1	0.000E-01	0.0	1.011E-03	85.9
160	Cd+2	1.189E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.593E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	7.660E-03	78.5	0.000E-01	0.0	2.092E-03	21.5
281	Fe+3	6.754E-12	0.0	0.000E-01	0.0	4.258E-06	100.0
460	Mg+2	8.306E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	3.656E-03	100.0	0.000E-01	0.0	1.247E-06	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	4.149E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	4.231E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.288E-04	61.1	0.000E-01	0.0	3.370E-04	38.9
580	PO4-3	2.202E-08	1.7	0.000E-01	0.0	1.247E-06	98.3
140	CO3-2	1.060E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.217E-03	99.9	0.000E-01	0.0	1.277E-06	0.1
732	SO4-2	2.966E-02	91.5	0.000E-01	0.0	2.766E-03	8.5
2	H2O	2.159E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	2.238E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 4.237E-02 Sum of ANIONS 4.091E-02

PERCENT DIFFERENCE = 1.755E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.784E-02

EQUILIBRIUM pH = 5.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 16282700

!!
*** This is the beginning of SWEEP NUMBER 4 in the series of 7 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 6.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	2.087E-06	-5.681	-5.880	38.690
6015001	GYPSUM	2.107E-03	-2.676	4.848	-0.261
6041001	ALUNITE	3.881E-04	-3.411	1.346	-3.918
7047001	MNHPO4(C)	1.267E-06	-5.897	25.400	0.000
6023101	BROCHANTITE	6.221E-04	-3.206	-15.340	0.000
4215000	FLUORITE	1.378E-04	-3.861	10.949	-4.710

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Pb+2	34.2	PERCENT BOUND IN SPECIES # 600	Pb+2
	57.8	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ
	6.0	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2
Al+3	2.1	PERCENT BOUND IN SPECIES # 302700	AlF +2
	44.6	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	50.5	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	2.5	PERCENT BOUND IN SPECIES # 302703	AlF4 -
Cd+2	47.5	PERCENT BOUND IN SPECIES # 160	Cd+2
	2.2	PERCENT BOUND IN SPECIES #1601800	CdCl +
	41.2	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	8.9	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2
Cu+2	60.8	PERCENT BOUND IN SPECIES # 231	Cu+2
	37.3	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
H3AsO4	74.1	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	25.9	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
Zn+2	54.9	PERCENT BOUND IN SPECIES # 950	Zn+2
	38.6	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	6.2	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
Mg+2	65.1	PERCENT BOUND IN SPECIES # 460	Mg+2
	34.8	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Mn+2	64.5	PERCENT BOUND IN SPECIES # 470	Mn+2
	35.3	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
Na+1	96.3	PERCENT BOUND IN SPECIES # 500	Na+1
	3.7	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Cl-1	99.4	PERCENT BOUND IN SPECIES # 180	Cl-1
Fe+3	98.5	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
F-1	66.7	PERCENT BOUND IN SPECIES # 270	F-1
	9.5	PERCENT BOUND IN SPECIES #4602700	MgF +
	1.1	PERCENT BOUND IN SPECIES #1502700	CaF +
	7.5	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	12.8	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
CO3-2	3.6	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	33.9	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	59.5	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
H+1	2.3	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	21.4	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	74.9	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
K+1	94.9	PERCENT BOUND IN SPECIES # 410	K+1
	5.1	PERCENT BOUND IN SPECIES #4107320	KSO4 -

SO4-2	67.0	PERCENT BOUND IN SPECIES # 732	SO4-2
10.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
9.9	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.1	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
4.5	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
5.5	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
1.8	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
PO4-3	73.0	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
5.1	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +	
5.7	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ	
3.6	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ	
3.4	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +	
9.1	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	
H2O	1.4	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
1.1	PERCENT BOUND IN SPECIES #4703300	MnOH +	
10.5	PERCENT BOUND IN SPECIES #2313300	CuOH +	
34.1	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
4.2	PERCENT BOUND IN SPECIES #2313304	Cu2(OH)2+2	
44.9	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
1.0	PERCENT BOUND IN SPECIES #9501804	ZnOHCl AQ	
Ca+2	62.0	PERCENT BOUND IN SPECIES # 150	Ca+2
38.0	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	1.244E-05	1.1	0.000E-01	0.0	1.164E-03	98.9
160	Cd+2	1.189E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	9.585E-05	3.7	0.000E-01	0.0	2.490E-03	96.3
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	4.150E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	8.307E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
470	Mn+2	3.656E-03	100.0	0.000E-01	0.0	1.267E-06	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.219E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	4.953E-13	0.0	0.000E-01	0.0	4.174E-06	100.0
270	F-1	1.474E-04	34.8	0.000E-01	0.0	2.756E-04	65.2
140	CO3-2	1.643E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	2.609E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	4.778E-04	55.2	0.000E-01	0.0	3.881E-04	44.8
732	SO4-2	2.892E-02	89.2	0.000E-01	0.0	3.505E-03	10.8
580	PO4-3	2.618E-09	0.2	0.000E-01	0.0	1.267E-06	99.8
2	H2O	2.778E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	7.507E-03	77.0	0.000E-01	0.0	2.244E-03	23.0

Charge Balance: SPECIATED

Sum of CATIONS = 3.848E-02 Sum of ANIONS 4.115E-02

PERCENT DIFFERENCE = 3.357E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.420E-02

EQUILIBRIUM pH = 6.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 16293220

!!

*** This is the beginning of SWEEP NUMBER 5 in the series of 7 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 7.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	2.087E-06	-5.681	-5.880	38.690
6015001	GYPSUM	2.784E-03	-2.555	4.848	-0.261
2003001	BOEHMITE	1.177E-03	-2.929	-8.578	28.130
7047001	MNHPO4(C)	1.266E-06	-5.898	25.400	0.000
2023101	TENORITE	2.588E-03	-2.587	-7.620	15.240
4215000	FLUORITE	1.506E-04	-3.822	10.949	-4.710
5016000	OTAVITE	1.137E-05	-4.944	13.740	0.580
5047000	RHODOCHROSIT	2.888E-03	-2.539	10.410	2.079
5095001	ZNCO3, 1H2O	2.812E-03	-2.551	10.260	0.000

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Pb+2	20.2	PERCENT BOUND IN SPECIES # 600	Pb+2
2.0	PERCENT BOUND IN SPECIES #6003300	PbOH +	
40.3	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
28.9	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ	
4.8	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2	
3.4	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +	
Na+1	95.7	PERCENT BOUND IN SPECIES # 500	Na+1
4.3	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Cl-1	99.8	PERCENT BOUND IN SPECIES # 180	Cl-1
K+1	94.1	PERCENT BOUND IN SPECIES # 410	K+1
5.9	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
H3AsO4	22.5	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
77.5	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2	
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
Mg+2	61.2	PERCENT BOUND IN SPECIES # 460	Mg+2
38.5	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Ca+2	58.0	PERCENT BOUND IN SPECIES # 150	Ca+2
41.8	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Cu+2	31.7	PERCENT BOUND IN SPECIES # 231	Cu+2
14.0	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ	
1.6	PERCENT BOUND IN SPECIES #2313300	CuOH +	
26.2	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
22.9	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
3.3	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +	
Al+3	2.8	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
35.7	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
14.2	PERCENT BOUND IN SPECIES # 302701	AlF2 +	
17.5	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ	
28.1	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
Zn+2	49.2	PERCENT BOUND IN SPECIES # 950	Zn+2
40.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
7.5	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
1.3	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
Fe+3	90.6	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
8.3	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ	
1.1	PERCENT BOUND IN SPECIES #2813303	FeOH4 -	
SO4-2	74.6	PERCENT BOUND IN SPECIES # 732	SO4-2
10.8	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
9.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.3	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
1.0	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
1.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	

Mn+2		60.6	PERCENT BOUND IN SPECIES # 470	Mn+2
	39.0	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
PO4-3		28.2	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	1.9	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +	
	21.0	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ	
	12.0	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ	
	1.1	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +	
	34.6	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	
H+1		1.7	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	1.2	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +	
	2.2	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
	70.5	PERCENT BOUND IN SPECIES #3301400	HCO3 -	
	24.8	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	
F-1		86.5	PERCENT BOUND IN SPECIES # 270	F-1
	11.7	PERCENT BOUND IN SPECIES #4602700	MgF +	
	1.2	PERCENT BOUND IN SPECIES #1502700	CaF +	
Cd+2		42.2	PERCENT BOUND IN SPECIES # 160	Cd+2
	2.0	PERCENT BOUND IN SPECIES #1601800	CdCl +	
	43.1	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
	1.1	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +	
	10.6	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
CO3-2		1.9	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	1.3	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +	
	2.4	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
	1.5	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ	
	78.3	PERCENT BOUND IN SPECIES #3301400	HCO3 -	
	13.8	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ	
H2O		1.9	PERCENT BOUND IN SPECIES #3300020	OH-
	2.8	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -	
	1.7	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ	
	25.5	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
	54.4	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
	9.8	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ	
	1.2	PERCENT BOUND IN SPECIES #9501804	ZnOHCl AQ	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.219E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.659E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	8.306E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	6.818E-03	69.9	0.000E-01	0.0	2.934E-03	30.1
231	Cu+2	3.263E-06	0.1	0.000E-01	0.0	2.590E-03	99.9
30	Al+3	1.325E-07	0.0	0.000E-01	0.0	1.177E-03	100.0
950	Zn+2	1.338E-03	32.2	0.000E-01	0.0	2.812E-03	67.8
281	Fe+3	3.994E-14	0.0	0.000E-01	0.0	4.174E-06	100.0
732	SO4-2	2.964E-02	91.4	0.000E-01	0.0	2.784E-03	8.6
470	Mn+2	7.682E-04	21.0	0.000E-01	0.0	2.889E-03	79.0
580	PO4-3	3.376E-09	0.3	0.000E-01	0.0	1.266E-06	99.7
330	H+1	7.882E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	1.219E-04	28.8	0.000E-01	0.0	3.012E-04	71.2
160	Cd+2	5.154E-07	4.3	0.000E-01	0.0	1.137E-05	95.7
140	CO3-2	7.099E-04	11.1	0.000E-01	0.0	5.711E-03	88.9
2	H2O	6.707E-06	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 2.961E-02 Sum of ANIONS 4.690E-02

PERCENT DIFFERENCE = 2.260E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.063E-02

EQUILIBRIUM pH = 7.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 16311250

!!
*** This is the beginning of SWEEP NUMBER 6 in the series of 7 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 8.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	2.087E-06	-5.681	-5.880	38.690
7015002	FCO3APATITE	2.632E-07	-6.580	114.400	-39.390
2003001	BOEHMITE	1.176E-03	-2.930	-8.578	28.130
5095001	ZNCO3, 1H2O	4.108E-03	-2.386	10.260	0.000
2023101	TENORITE	2.589E-03	-2.587	-7.620	15.240
4215000	FLUORITE	4.339E-05	-4.363	10.949	-4.710
5016000	OTAVITE	1.188E-05	-4.925	13.740	0.580
5047000	RHODOCHROSIT	3.648E-03	-2.438	10.410	2.079
5015002	DOLOMITE	7.617E-03	-2.118	17.000	8.290
5015001	CALCITE	1.266E-03	-2.898	8.475	2.585

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Pb+2	11.2	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2
	1.6	PERCENT BOUND IN SPECIES #6007320 PbSO4 AQ	
	84.7	PERCENT BOUND IN SPECIES #6001401 PbCO3 AQ	
Na+1	93.9	PERCENT BOUND IN SPECIES # 500	Na+1
	5.9	PERCENT BOUND IN SPECIES #5007320 NaSO4 -	
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
K+1	92.0	PERCENT BOUND IN SPECIES # 410	K+1
	8.0	PERCENT BOUND IN SPECIES #4107320 KSO4 -	
H3AsO4	2.8	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	97.1	PERCENT BOUND IN SPECIES #3300612 HAsO4 -2	
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
SO4-2	95.9	PERCENT BOUND IN SPECIES # 732	SO4-2
	1.2	PERCENT BOUND IN SPECIES #1507320 CaSO4 AQ	
	1.6	PERCENT BOUND IN SPECIES #5007320 NaSO4 -	
Mg+2	52.2	PERCENT BOUND IN SPECIES # 460	Mg+2
	1.4	PERCENT BOUND IN SPECIES #4601401 MgHCO3 +	
	45.5	PERCENT BOUND IN SPECIES #4607320 MgSO4 AQ	
H+1	96.1	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	3.4	PERCENT BOUND IN SPECIES #3301401 H2CO3 AQ	
Al+3	92.5	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	7.2	PERCENT BOUND IN SPECIES # 303303 Al(OH)3 AQ	
Fe+3	32.4	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	29.7	PERCENT BOUND IN SPECIES #2813302 FeOH3 AQ	
	37.9	PERCENT BOUND IN SPECIES #2813303 FeOH4 -	
PO4-3	6.8	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	1.1	PERCENT BOUND IN SPECIES #4605800 MgPO4 -	
	3.6	PERCENT BOUND IN SPECIES #4605802 MgHPO4 AQ	
	2.9	PERCENT BOUND IN SPECIES #1505800 CaHPO4 AQ	
	84.1	PERCENT BOUND IN SPECIES #3305800 HPO4 -2	
Cu+2	33.1	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	2.2	PERCENT BOUND IN SPECIES #2311401 Cu(CO3)2-2	
	62.0	PERCENT BOUND IN SPECIES #2313301 Cu(OH)2 AQ	
Zn+2	15.9	PERCENT BOUND IN SPECIES # 950	Zn+2
	18.3	PERCENT BOUND IN SPECIES #9507320 ZnSO4 AQ	
	4.7	PERCENT BOUND IN SPECIES #9507321 Zn(SO4)2-2	
	4.2	PERCENT BOUND IN SPECIES #9501400 ZnHCO3 +	
	25.9	PERCENT BOUND IN SPECIES #9501401 ZnCO3 AQ	
	29.2	PERCENT BOUND IN SPECIES #9501402 Zn(CO3)2-2	
H2O	20.8	PERCENT BOUND IN SPECIES #3300020	OH-
	31.3	PERCENT BOUND IN SPECIES # 303302 Al(OH)4 -	
	1.8	PERCENT BOUND IN SPECIES # 303303 Al(OH)3 AQ	

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                28.2      PERCENT BOUND IN SPECIES #2313301   Cu(OH)2 AQ
                 6.0      PERCENT BOUND IN SPECIES #9503300   ZnOH +
                10.8      PERCENT BOUND IN SPECIES #9503301   Zn(OH)2 AQ

F-1                          98.8      PERCENT BOUND IN SPECIES #    270   F-1

Cd+2                         19.0      PERCENT BOUND IN SPECIES #    160   Cd+2
                26.8      PERCENT BOUND IN SPECIES #1607320   CdSO4 AQ
                 5.0      PERCENT BOUND IN SPECIES #1601400   CdHCO3 +
                38.8      PERCENT BOUND IN SPECIES #1601401   CdCO3 AQ
                 9.3      PERCENT BOUND IN SPECIES #1607321   Cd(SO4)2-2

Mn+2                         51.6      PERCENT BOUND IN SPECIES #    470   Mn+2
                46.0      PERCENT BOUND IN SPECIES #4707320   MnSO4 AQ
                 2.1      PERCENT BOUND IN SPECIES #4701400   MnHCO3 +

Ca+2                         49.2      PERCENT BOUND IN SPECIES #    150   Ca+2
                 1.1      PERCENT BOUND IN SPECIES #1501400   CaHCO3 +
                49.1      PERCENT BOUND IN SPECIES #1507320   CaSO4 AQ

CO3-2                        96.0      PERCENT BOUND IN SPECIES #3301400   HCO3 -
                 1.7      PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	9.475E-08	0.0
180	Cl-1	1.219E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.659E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	3.242E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	6.886E-04	8.3	0.000E-01	0.0	7.618E-03	91.7
330	H+1	5.792E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	5.132E-07	0.0	0.000E-01	0.0	1.176E-03	100.0
281	Fe+3	1.120E-14	0.0	0.000E-01	0.0	4.174E-06	100.0
580	PO4-3	6.100E-09	0.5	0.000E-01	0.0	1.263E-06	99.5
231	Cu+2	1.380E-06	0.1	0.000E-01	0.0	2.591E-03	99.9
950	Zn+2	4.162E-05	1.0	0.000E-01	0.0	4.108E-03	99.0
2	H2O	6.063E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	3.356E-04	79.3	0.000E-01	0.0	8.744E-05	20.7
160	Cd+2	1.155E-08	0.1	0.000E-01	0.0	1.188E-05	99.9
470	Mn+2	9.086E-06	0.2	0.000E-01	0.0	3.648E-03	99.8
150	Ca+2	8.214E-04	8.4	0.000E-01	0.0	8.930E-03	91.6
140	CO3-2	5.799E-03	19.3	0.000E-01	0.0	2.427E-02	80.7

Charge Balance: SPECIATED

Sum of CATIONS = 1.062E-02 Sum of ANIONS 7.021E-02

PERCENT DIFFERENCE = 7.372E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.236E-02

EQUILIBRIUM pH = 8.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 16323450

!!!
*** This is the beginning of SWEEP NUMBER 7 in the series of 7 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 9.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
3023100	CUPRICFERIT	2.087E-06	-5.681	-5.880	38.690
5015002	DOLOMITE	8.295E-03	-2.081	17.000	8.290
2003001	BOEHMITE	1.172E-03	-2.931	-8.578	28.130
5095001	ZNCO3, 1H2O	2.739E-03	-2.562	10.260	0.000
2023101	TENORITE	2.586E-03	-2.587	-7.620	15.240
5015001	CALCITE	1.442E-03	-2.841	8.475	2.585
5016000	OTAVITE	1.188E-05	-4.925	13.740	0.580
5047000	RHODOCHROSIT	3.657E-03	-2.437	10.410	2.079

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

Pb+2	93.9	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2
	6.1	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ
Na+1	89.9	PERCENT BOUND IN SPECIES # 500	Na+1
	3.5	PERCENT BOUND IN SPECIES #5001400	NaCO3 -
	1.7	PERCENT BOUND IN SPECIES #5001401	NaHCO3 AQ
	5.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
K+1	92.8	PERCENT BOUND IN SPECIES # 410	K+1
	7.2	PERCENT BOUND IN SPECIES #4107320	KSO4 -
H3AsO4	98.8	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
SO4-2	98.4	PERCENT BOUND IN SPECIES # 732	SO4-2
	1.4	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
PO4-3	98.3	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
F-1	99.9	PERCENT BOUND IN SPECIES # 270	F-1
Mg+2	38.7	PERCENT BOUND IN SPECIES # 460	Mg+2
	25.9	PERCENT BOUND IN SPECIES #4601400	MgCO3 AQ
	9.0	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	25.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
H+1	99.5	PERCENT BOUND IN SPECIES #3301400	HCO3 -
Al+3	99.3	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
Fe+3	6.9	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
	92.3	PERCENT BOUND IN SPECIES #2813303	FeOH4 -
Zn+2	99.2	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2
Cu+2	9.5	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	72.8	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2
	17.7	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
Cd+2	1.3	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +
	97.1	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ
H2O	37.1	PERCENT BOUND IN SPECIES #3300020	OH-
	55.8	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	4.8	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
	1.8	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ
Ca+2	33.6	PERCENT BOUND IN SPECIES # 150	Ca+2
	7.0	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	33.6	PERCENT BOUND IN SPECIES #1501401	CaCO3 AQ
	25.8	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ

Mn+2	48.3	PERCENT BOUND IN SPECIES #	470	Mn+2
33.0	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
18.0	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +		
CO3-2	8.9	PERCENT BOUND IN SPECIES #	140	CO3-2
4.2	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2		
86.1	PERCENT BOUND IN SPECIES #3301400	HCO3 -		

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
600	Pb+2	3.821E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.784E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.219E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.659E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	1.416E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.604E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	3.242E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	1.269E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	4.231E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	1.070E-05	0.1	0.000E-01	0.0	8.295E-03	99.9
330	H+1	5.796E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	4.953E-06	0.4	0.000E-01	0.0	1.172E-03	99.6
281	Fe+3	4.766E-14	0.0	0.000E-01	0.0	4.174E-06	100.0
950	Zn+2	1.410E-03	34.0	0.000E-01	0.0	2.739E-03	66.0
231	Cu+2	4.789E-06	0.2	0.000E-01	0.0	2.588E-03	99.8
160	Cd+2	4.576E-09	0.0	0.000E-01	0.0	1.188E-05	100.0
2	H2O	3.523E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	1.382E-05	0.1	0.000E-01	0.0	9.737E-03	99.9
470	Mn+2	1.119E-07	0.0	0.000E-01	0.0	3.657E-03	100.0
140	CO3-2	6.698E-02	73.3	0.000E-01	0.0	2.444E-02	26.7

Charge Balance: SPECIATED

Sum of CATIONS = 8.717E-03 Sum of ANIONS 1.388E-01

PERCENT DIFFERENCE = 8.818E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.131E-01

EQUILIBRIUM pH = 9.000

DATE ID NUMBER: 930225
TIME ID NUMBER: 16331509

9233c90 - pH sweep from 6.5 to 9.0 at fixed pCO2

Temperature (Celsius): 25.00
Units of concentration: MG/L
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed for all solids in the thermodynamic database and
the print option for solids is set to: 1
The maximum number of iterations is: 200
The method used to compute activity coefficients is: Davies equation
Intermediate output file

PART 1 of OUTPUT FILE

PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 26-FEB-93   TIME: 15:49:28

!!

----------- THE INPUT DATA WILL BE USED IN A SERIES OF 6 SWEEPS ------------

The input parameters for each sweep will be identical to this initial listing except that:

-- The fixed equilibrium pH in successive sweeps will be:
6.50 7.00 7.50 8.00 8.50 9.00

-- After the first sweep, the initial component activity guesses for each successive sweep are the equilibrium activities computed at the end of the sweep which precedes it.

!!

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
30	Al+3	1.000E-03	-3.000	4.540E-02
160	Cd+2	1.000E-04	-4.000	2.200E-03
231	Cu+2	1.000E-03	-3.000	3.020E-02
150	Ca+2	1.000E+01	1.000	2.250E+02
281	Fe+3	1.000E-03	-3.000	5.560E-02
600	Pb+2	1.000E-04	-4.000	1.000E-03
460	Mg+2	1.000E-01	-1.000	7.390E+01
470	Mn+2	1.000E-03	-3.000	1.840E-02
410	K+1	1.000E-01	-1.000	2.120E+01
500	Na+1	5.248E-03	-2.280	1.380E+02
950	Zn+2	1.000E-03	-3.000	6.210E-02
61	H3AsO4	1.000E-02	-2.000	1.400E-01
732	SO4-2	5.370E-03	-2.270	8.800E+02
580	PO4-3	1.000E-02	-2.000	4.400E-01
492	NO3-1	1.000E-01	-1.000	2.700E+01
270	F-1	2.399E-04	-3.620	2.500E+00
180	Cl-1	1.288E-03	-2.890	1.500E+01
140	CO3-2	1.000E-10	-10.000	0.000E-01
330	H+1	3.162E-07	-6.500	0.000E-01
2	H2O	1.000E+00	0.000	0.000E-01

Charge Balance: UNSPECIATED

Sum of CATIONS= 2.390E-02 Sum of ANIONS = 1.935E-02

PERCENT DIFFERENCE = 1.051E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	6.545E-07	-6.184	3.040	0.000
7015002	FCO3APATITE	9.573E-07	-6.019	114.400	-39.390
4215000	FLUORITE	1.617E-05	-4.791	10.949	-4.710
2003001	BOEHMITE	6.730E-07	-6.172	-8.578	28.130
3023100	CUPRICFERIT	1.712E-07	-6.766	-5.880	38.690

PC MINTEQA2 v3.10 DATE OF CALCULATIONS: 26-FEB-93 TIME: 15:50:18

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
Cd+2	62.8	PERCENT BOUND IN SPECIES # 160	Cd+2
1.3	PERCENT BOUND IN SPECIES #1601800	CdCl +	
32.6	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
2.5	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	62.8	PERCENT BOUND IN SPECIES # 231	Cu+2
3.6	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ	
1.2	PERCENT BOUND IN SPECIES #2313300	CuOH +	
6.7	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
23.1	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
2.5	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +	
Ca+2	73.1	PERCENT BOUND IN SPECIES # 150	Ca+2
26.8	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
SO4-2	74.4	PERCENT BOUND IN SPECIES # 732	SO4-2
8.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
16.3	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.1	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Pb+2	42.6	PERCENT BOUND IN SPECIES # 600	Pb+2
1.6	PERCENT BOUND IN SPECIES #6003300	PbOH +	
43.1	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
7.9	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ	
1.6	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2	
2.7	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +	
Mg+2	75.5	PERCENT BOUND IN SPECIES # 460	Mg+2
24.2	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+2	75.2	PERCENT BOUND IN SPECIES # 470	Mn+2
24.6	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
K+1	97.6	PERCENT BOUND IN SPECIES # 410	K+1
2.4	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
Na+1	98.3	PERCENT BOUND IN SPECIES # 500	Na+1
1.7	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	68.5	PERCENT BOUND IN SPECIES # 950	Zn+2
28.9	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
1.6	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	

H3AsO4	52.4	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	47.6	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
Fe+3	96.7	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	3.0	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
Al+3	1.1	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	1.4	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	1.7	PERCENT BOUND IN SPECIES # 302700	AlF +2
	41.9	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	48.0	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	2.1	PERCENT BOUND IN SPECIES # 302703	AlF4 -
	3.7	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
PO4-3	56.9	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	2.2	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +
	8.3	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ
	10.9	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ
	3.1	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +
	18.4	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
CO3-2	1.3	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	61.1	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	36.5	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
F-1	88.8	PERCENT BOUND IN SPECIES # 270	F-1
	7.0	PERCENT BOUND IN SPECIES #4602700	MgF +
	1.6	PERCENT BOUND IN SPECIES #1502700	CaF +
	1.5	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
H+1	44.9	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	53.7	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
H2O	13.1	PERCENT BOUND IN SPECIES #3300020	OH-
	2.5	PERCENT BOUND IN SPECIES #4603300	MgOH +
	7.9	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	19.8	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	39.5	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
	1.3	PERCENT BOUND IN SPECIES #2313300	CuOH +
	14.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
492	NO3-1	4.361E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.960E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	3.037E-07	63.9	0.000E-01	0.0	1.712E-07	36.1
150	Ca+2	5.596E-03	99.6	0.000E-01	0.0	2.526E-05	0.4
732	SO4-2	9.173E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.833E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	3.044E-03	100.0	0.000E-01	0.0	1.378E-07	0.0
470	Mn+2	3.354E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.429E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.011E-03	100.0	0.000E-01	0.0	3.446E-07	0.0
950	Zn+2	9.513E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	9.877E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	7.248E-13	0.0	0.000E-01	0.0	9.970E-07	100.0
30	Al+3	1.012E-06	60.1	0.000E-01	0.0	6.730E-07	39.9
580	PO4-3	4.456E-08	1.0	0.000E-01	0.0	4.595E-06	99.0
180	Cl-1	4.235E-04	100.0	0.000E-01	0.0	1.964E-07	0.0
140	CO3-2	2.706E-04	99.6	0.000E-01	0.0	1.149E-06	0.4
270	F-1	9.705E-05	73.7	0.000E-01	0.0	3.472E-05	26.3
330	H+1	3.682E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	2.851E-07	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.924E-02 Sum of ANIONS 1.487E-02

PERCENT DIFFERENCE = 1.279E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 3.027E-02

EQUILIBRIUM pH = 6.500

DATE ID NUMBER: 930226
TIME ID NUMBER: 15501936

!!
*** This is the beginning of SWEEP NUMBER 2 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 7.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	1.180E-07	-6.928	3.040	0.000
7015002	FCO3APATITE	9.656E-07	-6.015	114.400	-39.390
4215000	FLUORITE	1.727E-05	-4.763	10.949	-4.710
2003001	BOEHMITE	1.569E-06	-5.804	-8.578	28.130
3023100	CUPRICFERIT	4.395E-07	-6.357	-5.880	38.690

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
Cd+2	61.1	PERCENT BOUND IN SPECIES #	160	Cd+2
1.3	PERCENT BOUND IN SPECIES #1601800	CdCl +		
31.6	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ		
1.9	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +		
1.6	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ		
2.4	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2		
Cu+2	31.3	PERCENT BOUND IN SPECIES #	231	Cu+2
17.8	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ		
1.9	PERCENT BOUND IN SPECIES #2313300	CuOH +		
33.4	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ		
11.5	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ		
3.9	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +		
Ca+2	73.1	PERCENT BOUND IN SPECIES #	150	Ca+2
26.7	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
SO4-2	74.4	PERCENT BOUND IN SPECIES #	732	SO4-2
8.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
16.3	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ		
1.1	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
Pb+2	23.7	PERCENT BOUND IN SPECIES #	600	Pb+2
2.8	PERCENT BOUND IN SPECIES #6003300	PbOH +		
23.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ		
43.6	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ		
4.7	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +		
Mg+2	75.5	PERCENT BOUND IN SPECIES #	460	Mg+2
24.1	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ		
Mn+2	75.0	PERCENT BOUND IN SPECIES #	470	Mn+2
24.5	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ		
K+1	97.6	PERCENT BOUND IN SPECIES #	410	K+1
2.4	PERCENT BOUND IN SPECIES #4107320	KSO4 -		
Na+1	98.2	PERCENT BOUND IN SPECIES #	500	Na+1
1.7	PERCENT BOUND IN SPECIES #5007320	NaSO4 -		
Zn+2	66.4	PERCENT BOUND IN SPECIES #	950	Zn+2
27.9	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ		
1.6	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2		
2.1	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +		
1.4	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ		
H3AsO4	25.8	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
74.2	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2		
Fe+3	90.0	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
8.9	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ		
1.1	PERCENT BOUND IN SPECIES #2813303	FeOH4 -		

Al+3	3.1	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	38.5	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	11.6	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	13.3	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	32.4	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
PO4-3	31.1	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	1.2	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +
	14.4	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ
	18.7	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ
	1.7	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +
	31.8	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
CO3-2	1.1	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	1.8	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	81.3	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	15.4	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
F-1	91.1	PERCENT BOUND IN SPECIES # 270	F-1
	7.1	PERCENT BOUND IN SPECIES #4602700	MgF +
	1.7	PERCENT BOUND IN SPECIES #1502700	CaF +
H+1	1.5	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	70.8	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	26.8	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
H2O	25.1	PERCENT BOUND IN SPECIES #3300020	OH-
	4.9	PERCENT BOUND IN SPECIES #4603300	MgOH +
	1.3	PERCENT BOUND IN SPECIES #1503300	CaOH +
	1.5	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	37.8	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	23.9	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
	4.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ

EQUILIBRATED MASS DISTRIBUTION

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
492	NO3-1	4.360E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.960E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	3.056E-08	6.5	0.000E-01	0.0	4.395E-07	93.5
150	Ca+2	5.595E-03	99.5	0.000E-01	0.0	2.644E-05	0.5
732	SO4-2	9.173E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.833E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	3.044E-03	100.0	0.000E-01	0.0	1.390E-07	0.0
470	Mn+2	3.354E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.429E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.011E-03	100.0	0.000E-01	0.0	3.476E-07	0.0
950	Zn+2	9.513E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	9.876E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	3.480E-13	0.0	0.000E-01	0.0	9.970E-07	100.0
30	Al+3	1.159E-07	6.9	0.000E-01	0.0	1.569E-06	93.1
580	PO4-3	4.607E-09	0.1	0.000E-01	0.0	4.635E-06	99.9
180	Cl-1	4.236E-04	100.0	0.000E-01	0.0	3.540E-08	0.0
140	CO3-2	6.431E-04	99.8	0.000E-01	0.0	1.159E-06	0.2
270	F-1	9.484E-05	72.0	0.000E-01	0.0	3.693E-05	28.0
330	H+1	7.387E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	4.725E-07	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.923E-02 Sum of ANIONS 1.525E-02

PERCENT DIFFERENCE = 1.156E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 3.045E-02

EQUILIBRIUM pH = 7.000

DATE ID NUMBER: 930226
TIME ID NUMBER: 15503787

!!
*** This is the beginning of SWEEP NUMBER 3 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:

1) The fixed pH is: 7.50
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	4.476E-08	-7.349	3.040	0.000
7015002	FCO3APATITE	9.663E-07	-6.015	114.400	-39.390
4215000	FLUORITE	1.098E-05	-4.959	10.949	-4.710
2003001	BOEHMITE	1.504E-06	-5.823	-8.578	28.130
3023100	CUPRICFERIT	4.761E-07	-6.322	-5.880	38.690
5015001	CALCITE	1.252E-03	-2.902	8.475	2.585

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
Cd+2	50.5	PERCENT BOUND IN SPECIES # 160	Cd+2
1.1	PERCENT BOUND IN SPECIES #1601800	CdCl +	
27.6	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
5.1	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +	
13.5	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ	
2.2	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	5.4	PERCENT BOUND IN SPECIES # 231	Cu+2
31.0	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ	
1.0	PERCENT BOUND IN SPECIES #2313300	CuOH +	
58.1	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
2.1	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
2.2	PERCENT BOUND IN SPECIES #2311402	CuHCO3 +	
H3AsO4	10.0	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
90.0	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2	
SO4-2	77.3	PERCENT BOUND IN SPECIES # 732	SO4-2
8.3	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
13.1	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.2	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Pb+2	4.6	PERCENT BOUND IN SPECIES # 600	Pb+2
1.7	PERCENT BOUND IN SPECIES #6003300	PbOH +	
4.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
84.8	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ	
2.9	PERCENT BOUND IN SPECIES #6001402	PbHCO3 +	
Mg+2	74.0	PERCENT BOUND IN SPECIES # 460	Mg+2
24.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+2	73.4	PERCENT BOUND IN SPECIES # 470	Mn+2
25.3	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
1.2	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +	
K+1	97.5	PERCENT BOUND IN SPECIES # 410	K+1
2.5	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
Na+1	98.1	PERCENT BOUND IN SPECIES # 500	Na+1
1.8	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	54.6	PERCENT BOUND IN SPECIES # 950	Zn+2
1.2	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
24.2	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
1.4	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
5.5	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
11.6	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ	
1.0	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2	
Ca+2	71.6	PERCENT BOUND IN SPECIES # 150	Ca+2
27.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Al+3	77.9	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -

	20.8	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
Fe+3	69.9	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	21.9	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
	8.2	PERCENT BOUND IN SPECIES #2813303	FeOH4 -
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
PO4-3	13.4	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	1.7	PERCENT BOUND IN SPECIES #4605800	MgPO4 -
	19.3	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ
	19.6	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ
	1.7	PERCENT BOUND IN SPECIES #1505801	CaPO4 -
	42.9	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
F-1	91.6	PERCENT BOUND IN SPECIES # 270	F-1
	7.1	PERCENT BOUND IN SPECIES #4602700	MgF +
	1.3	PERCENT BOUND IN SPECIES #1502700	CaF +
H2O	32.0	PERCENT BOUND IN SPECIES #3300020	OH-
	6.1	PERCENT BOUND IN SPECIES #4603300	MgOH +
	1.3	PERCENT BOUND IN SPECIES #1503300	CaOH +
	48.3	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	9.7	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
H+1	1.2	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	1.5	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	86.9	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	10.4	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
CO3-2	1.2	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	1.5	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	91.0	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	5.4	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
492	NO3-1	4.361E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.960E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	8.822E-09	1.8	0.000E-01	0.0	4.761E-07	98.2
61	H3AsO4	9.877E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	9.174E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.833E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	3.044E-03	100.0	0.000E-01	0.0	1.392E-07	0.0
470	Mn+2	3.354E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.429E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.011E-03	100.0	0.000E-01	0.0	3.479E-07	0.0
950	Zn+2	9.513E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	4.349E-03	77.4	0.000E-01	0.0	1.272E-03	22.6
30	Al+3	1.809E-07	10.7	0.000E-01	0.0	1.504E-06	89.3
281	Fe+3	1.996E-13	0.0	0.000E-01	0.0	9.970E-07	100.0
180	Cl-1	4.237E-04	100.0	0.000E-01	0.0	1.343E-08	0.0
580	PO4-3	9.477E-10	0.0	0.000E-01	0.0	4.638E-06	100.0
270	F-1	1.074E-04	81.5	0.000E-01	0.0	2.437E-05	18.5
2	H2O	1.168E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	1.900E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	1.815E-03	59.2	0.000E-01	0.0	1.253E-03	40.8

Charge Balance: SPECIATED

Sum of CATIONS = 1.722E-02 Sum of ANIONS 1.692E-02

PERCENT DIFFERENCE = 8.717E-01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 2.953E-02

EQUILIBRIUM pH = 7.500

DATE ID NUMBER: 930226
TIME ID NUMBER: 15510561

!!
*** This is the beginning of SWEEP NUMBER 4 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 8.00
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	5.362E-08	-7.271	3.040	0.000
7015002	FCO3APATITE	9.650E-07	-6.015	114.400	-39.390
5015001	CALCITE	2.501E-03	-2.602	8.475	2.585
2003001	BOEHMITE	1.206E-06	-5.919	-8.578	28.130
3023100	CUPRICFERIT	4.717E-07	-6.326	-5.880	38.690
5015002	DOLOMITE	2.645E-03	-2.578	17.000	8.290
5016000	OTAVITE	1.156E-08	-7.937	13.740	0.580

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
Zn+2	16.2	PERCENT BOUND IN SPECIES # 950	Zn+2
1.1	PERCENT BOUND IN SPECIES #9503300	ZnOH +	
1.1	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ	
9.7	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
5.3	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +	
36.1	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ	
29.8	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2	
Cu+2	33.6	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
1.6	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2	
62.9	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ	
H3AsO4	3.5	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
96.5	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2	
SO4-2	95.3	PERCENT BOUND IN SPECIES # 732	SO4-2
1.3	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
1.7	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.5	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Pb+2	8.6	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2
88.7	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ	
PO4-3	8.2	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
1.3	PERCENT BOUND IN SPECIES #4605800	MgPO4 -	
4.7	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ	
3.8	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ	
1.1	PERCENT BOUND IN SPECIES #1505801	CaPO4 -	
80.4	PERCENT BOUND IN SPECIES #3305800	HPO4 -2	
Mn+2	65.9	PERCENT BOUND IN SPECIES # 470	Mn+2
30.5	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ	
3.4	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +	
K+1	96.8	PERCENT BOUND IN SPECIES # 410	K+1
3.2	PERCENT BOUND IN SPECIES #4107320	KSO4 -	
Na+1	97.4	PERCENT BOUND IN SPECIES # 500	Na+1
2.3	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Cd+2	20.2	PERCENT BOUND IN SPECIES # 160	Cd+2
14.8	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
6.6	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +	
56.4	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ	
1.4	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
Fe+3	31.5	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
31.5	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ	
37.0	PERCENT BOUND IN SPECIES #2813303	FeOH4 -	
Al+3	92.1	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -

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                7.9     PERCENT BOUND IN SPECIES # 303303   Al(OH)3 AQ

F-1                        98.9     PERCENT BOUND IN SPECIES #    270   F-1

Mg+2                       66.7     PERCENT BOUND IN SPECIES #    460   Mg+2
               2.2     PERCENT BOUND IN SPECIES #4601401   MgHCO3 +
              30.1     PERCENT BOUND IN SPECIES #4607320   MgSO4 AQ

H2O                        37.6     PERCENT BOUND IN SPECIES #3300020   OH-
             56.6      PERCENT BOUND IN SPECIES # 303302   Al(OH)4 -
              3.6      PERCENT BOUND IN SPECIES # 303303   Al(OH)3 AQ

H+1                        95.9     PERCENT BOUND IN SPECIES #3301400   HCO3 -
              3.7      PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ

Ca+2                       64.0     PERCENT BOUND IN SPECIES #    150   Ca+2
              1.9      PERCENT BOUND IN SPECIES #1501400   CaHCO3 +
              1.0      PERCENT BOUND IN SPECIES #1501401   CaCO3 AQ
             33.1      PERCENT BOUND IN SPECIES #1507320   CaSO4 AQ

CO3-2                      96.7     PERCENT BOUND IN SPECIES #3301400   HCO3 -
              1.9      PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ
```

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
492	NO3-1	4.361E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	9.513E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	4.117E-09	0.9	0.000E-01	0.0	4.717E-07	99.1
61	H3AsO4	9.877E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	9.173E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.833E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	7.591E-09	0.2	0.000E-01	0.0	4.632E-06	99.8
470	Mn+2	3.354E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.429E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.011E-03	100.0	0.000E-01	0.0	3.474E-07	0.0
160	Cd+2	8.041E-09	41.0	0.000E-01	0.0	1.156E-08	59.0
180	Cl-1	4.237E-04	100.0	0.000E-01	0.0	1.609E-08	0.0
281	Fe+3	1.952E-13	0.0	0.000E-01	0.0	9.970E-07	100.0
30	Al+3	4.790E-07	28.4	0.000E-01	0.0	1.206E-06	71.6
270	F-1	1.294E-04	98.2	0.000E-01	0.0	2.393E-06	1.8
460	Mg+2	3.990E-04	13.1	0.000E-01	0.0	2.645E-03	86.9
2	H2O	3.118E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	5.389E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	4.668E-04	8.3	0.000E-01	0.0	5.155E-03	91.7
140	CO3-2	5.345E-03	40.7	0.000E-01	0.0	7.791E-03	59.3

Charge Balance: SPECIATED

Sum of CATIONS = 7.531E-03 Sum of ANIONS 2.388E-02

PERCENT DIFFERENCE = 5.204E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 2.505E-02

EQUILIBRIUM pH = 8.000

DATE ID NUMBER: 930226
TIME ID NUMBER: 15515246

!!
*** This is the beginning of SWEEP NUMBER 5 in the series of 6 ***

The input for this sweep is identical to the initial sweep except:
1) The fixed pH is: 8.50
2) The log activity guesses for all components are as computed at the point of FIRST convergence in the previous problem.

!!

Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	6.465E-08	-7.189	3.040	0.000
7015002	FCO3APATITE	9.413E-07	-6.026	114.400	-39.390
5015001	CALCITE	2.560E-03	-2.592	8.475	2.585
2003001	BOEHMITE	2.339E-07	-6.631	-8.578	28.130
3023100	CUPRICFERIT	4.662E-07	-6.331	-5.880	38.690
5015002	DOLOMITE	2.998E-03	-2.523	17.000	8.290
5016000	OTAVITE	1.460E-08	-7.836	13.740	0.580

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

NO3-1	100.0	PERCENT BOUND IN SPECIES #	492	NO3-1
Zn+2	10.1	PERCENT BOUND IN SPECIES #9501401		ZnCO3 AQ
88.2	PERCENT BOUND IN SPECIES #9501402			Zn(CO3)2-2
Cu+2	29.4	PERCENT BOUND IN SPECIES #2311400		CuCO3 AQ
15.1	PERCENT BOUND IN SPECIES #2311401			Cu(CO3)2-2
55.1	PERCENT BOUND IN SPECIES #2313301			Cu(OH)2 AQ
H3AsO4	1.1	PERCENT BOUND IN SPECIES #3300611		H2AsO4 -
98.7	PERCENT BOUND IN SPECIES #3300612			HAsO4 -2
SO4-2	98.1	PERCENT BOUND IN SPECIES #	732	SO4-2
1.5	PERCENT BOUND IN SPECIES #5007320			NaSO4 -
Pb+2	50.4	PERCENT BOUND IN SPECIES #6001400		Pb(CO3)2-2
49.2	PERCENT BOUND IN SPECIES #6001401			PbCO3 AQ
PO4-3	2.9	PERCENT BOUND IN SPECIES #3305801		H2PO4 -
94.7	PERCENT BOUND IN SPECIES #3305800			HPO4 -2
Mn+2	62.9	PERCENT BOUND IN SPECIES #	470	Mn+2
26.8	PERCENT BOUND IN SPECIES #4707320			MnSO4 AQ
9.9	PERCENT BOUND IN SPECIES #4701400			MnHCO3 +
K+1	96.9	PERCENT BOUND IN SPECIES #	410	K+1
3.1	PERCENT BOUND IN SPECIES #4107320			KSO4 -
Na+1	96.8	PERCENT BOUND IN SPECIES #	500	Na+1
2.2	PERCENT BOUND IN SPECIES #5007320			NaSO4 -
Cd+2	3.4	PERCENT BOUND IN SPECIES #	160	Cd+2
2.3	PERCENT BOUND IN SPECIES #1607320			CdSO4 AQ
3.4	PERCENT BOUND IN SPECIES #1601400			CdHCO3 +
90.5	PERCENT BOUND IN SPECIES #1601401			CdCO3 AQ
Cl-1	100.0	PERCENT BOUND IN SPECIES #	180	Cl-1
Fe+3	6.3	PERCENT BOUND IN SPECIES #2813301		FeOH2 +
19.7	PERCENT BOUND IN SPECIES #2813302			FeOH3 AQ
74.0	PERCENT BOUND IN SPECIES #2813303			FeOH4 -
Al+3	97.4	PERCENT BOUND IN SPECIES # 303302		Al(OH)4 -
2.6	PERCENT BOUND IN SPECIES # 303303			Al(OH)3 AQ
F-1	99.8	PERCENT BOUND IN SPECIES #	270	F-1
Mg+2	61.7	PERCENT BOUND IN SPECIES #	460	Mg+2
6.2	PERCENT BOUND IN SPECIES #4601400			MgCO3 AQ
6.1	PERCENT BOUND IN SPECIES #4601401			MgHCO3 +
25.7	PERCENT BOUND IN SPECIES #4607320			MgSO4 AQ
H2O	39.3	PERCENT BOUND IN SPECIES #3300020		OH-
59.3	PERCENT BOUND IN SPECIES # 303302			Al(OH)4 -
1.2	PERCENT BOUND IN SPECIES # 303303			Al(OH)3 AQ

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H+1
                98.6     PERCENT BOUND IN SPECIES #3301400    HCO3 -
   1.2      PERCENT BOUND IN SPECIES #3301401    H2CO3 AQ

Ca+2
                58.3     PERCENT BOUND IN SPECIES #    150    Ca+2
   5.1      PERCENT BOUND IN SPECIES #1501400    CaHCO3 +
   8.7      PERCENT BOUND IN SPECIES #1501401    CaCO3 AQ
  27.8      PERCENT BOUND IN SPECIES #1507320    CaSO4 AQ

CO3-2
                 2.4     PERCENT BOUND IN SPECIES #    140    CO3-2
  96.6      PERCENT BOUND IN SPECIES #3301400    HCO3 -
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
492	NO3-1	4.360E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	9.513E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.332E-09	0.5	0.000E-01	0.0	4.662E-07	99.5
61	H3AsO4	9.876E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	9.173E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.833E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	1.238E-07	2.7	0.000E-01	0.0	4.518E-06	97.3
470	Mn+2	3.354E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.429E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.011E-03	100.0	0.000E-01	0.0	3.389E-07	0.0
160	Cd+2	5.004E-09	25.5	0.000E-01	0.0	1.460E-08	74.5
180	Cl-1	4.237E-04	100.0	0.000E-01	0.0	1.940E-08	0.0
281	Fe+3	4.433E-13	0.0	0.000E-01	0.0	9.970E-07	100.0
30	Al+3	1.451E-06	86.1	0.000E-01	0.0	2.339E-07	13.9
270	F-1	1.294E-04	98.2	0.000E-01	0.0	2.334E-06	1.8
460	Mg+2	4.553E-05	1.5	0.000E-01	0.0	2.998E-03	98.5
2	H2O	9.541E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	1.679E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	5.410E-05	1.0	0.000E-01	0.0	5.567E-03	99.0
140	CO3-2	1.714E-02	66.7	0.000E-01	0.0	8.558E-03	33.3

Charge Balance: SPECIATED

Sum of CATIONS = 6.467E-03 Sum of ANIONS 3.653E-02

PERCENT DIFFERENCE = 6.992E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 3.096E-02

EQUILIBRIUM pH = 8.500

DATE ID NUMBER: 930226
TIME ID NUMBER: 15521487

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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
*** This is the beginning of SWEEP NUMBER  6 in the series of  6 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:     9.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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Type IV - FINITE SOLIDS (present at equilibrium)

ID	NAME	CALC MOL	LOG MOL	NEW LOGK	DH
4128100	FEOH)2.7CL.3	3.928E-08	-7.406	3.040	0.000
7015002	FCO3APATITE	4.111E-07	-6.386	114.400	-39.390
5015001	CALCITE	2.571E-03	-2.590	8.475	2.585
5016000	OTAVITE	1.501E-08	-7.824	13.740	0.580
3023100	CUPRICFERIT	4.788E-07	-6.320	-5.880	38.690
5015002	DOLOMITE	3.036E-03	-2.518	17.000	8.290
5047000	RHODOCHROSIT	2.586E-07	-6.587	10.410	2.079

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
Zn+2	99.0	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2
Cu+2	11.0	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	68.3	PERCENT BOUND IN SPECIES #2311401	Cu(CO3)2-2
	20.6	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
H3AsO4	99.0	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
SO4-2	98.6	PERCENT BOUND IN SPECIES # 732	SO4-2
	1.2	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Pb+2	92.5	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2
	7.5	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ
PO4-3	98.2	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
Al+3	99.2	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
K+1	97.4	PERCENT BOUND IN SPECIES # 410	K+1
	2.6	PERCENT BOUND IN SPECIES #4107320	KSO4 -
Na+1	92.8	PERCENT BOUND IN SPECIES # 500	Na+1
	3.6	PERCENT BOUND IN SPECIES #5001400	NaCO3 -
	1.8	PERCENT BOUND IN SPECIES #5001401	NaHCO3 AQ
	1.8	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Mn+2	57.3	PERCENT BOUND IN SPECIES # 470	Mn+2
	16.9	PERCENT BOUND IN SPECIES #4707320	MnSO4 AQ
	25.0	PERCENT BOUND IN SPECIES #4701400	MnHCO3 +
H2O	64.9	PERCENT BOUND IN SPECIES #3300020	OH-
	34.9	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
Fe+3	7.3	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
	91.9	PERCENT BOUND IN SPECIES #2813303	FeOH4 -
F-1	99.9	PERCENT BOUND IN SPECIES # 270	F-1
Mg+2	41.7	PERCENT BOUND IN SPECIES # 460	Mg+2
	34.7	PERCENT BOUND IN SPECIES #4601400	MgCO3 AQ
	11.3	PERCENT BOUND IN SPECIES #4601401	MgHCO3 +
	12.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Cd+2	1.2	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +
	98.0	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ
H+1	99.5	PERCENT BOUND IN SPECIES #3301400	HCO3 -
Ca+2	35.5	PERCENT BOUND IN SPECIES # 150	Ca+2
	8.6	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	44.1	PERCENT BOUND IN SPECIES #1501401	CaCO3 AQ

11.7 PERCENT BOUND IN SPECIES #1507320 CaSO4 AQ

CO3-2

8.1 PERCENT BOUND IN SPECIES # 140 CO3-2

91.2 PERCENT BOUND IN SPECIES #3301400 HCO3 -

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
492	NO3-1	4.361E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	9.513E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	3.020E-09	0.6	0.000E-01	0.0	4.788E-07	99.4
61	H3AsO4	9.877E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	9.174E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.833E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
580	PO4-3	2.664E-06	57.4	0.000E-01	0.0	1.973E-06	42.6
30	Al+3	1.685E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	5.429E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	6.011E-03	100.0	0.000E-01	0.0	1.480E-07	0.0
470	Mn+2	7.680E-08	22.9	0.000E-01	0.0	2.586E-07	77.1
2	H2O	1.916E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	4.237E-04	100.0	0.000E-01	0.0	1.178E-08	0.0
281	Fe+3	1.693E-12	0.0	0.000E-01	0.0	9.970E-07	100.0
270	F-1	1.308E-04	99.2	0.000E-01	0.0	1.019E-06	0.8
460	Mg+2	8.098E-06	0.3	0.000E-01	0.0	3.036E-03	99.7
160	Cd+2	4.592E-09	23.4	0.000E-01	0.0	1.501E-08	76.6
330	H+1	5.513E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	1.066E-05	0.2	0.000E-01	0.0	5.611E-03	99.8
140	CO3-2	6.014E-02	87.4	0.000E-01	0.0	8.643E-03	12.6

Charge Balance: SPECIATED

Sum of CATIONS = 6.123E-03 Sum of ANIONS 8.402E-02

PERCENT DIFFERENCE = 8.642E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.900E-02

EQUILIBRIUM pH = 9.000

DATE ID NUMBER: 930226
TIME ID NUMBER: 15525579

MINTEQA2 OUTPUT FOR ARSENIC SPECIATION

Table E-3.3. Summary of MINTEQA2 model run boundary conditions for As(V) speciation.

SITE	TREATMENT	DEPTH	DATE	EXCLUDED SOLIDS
MINTEQA2 MODEL BOUNDARY CONDITIONS All runs performed at 25 degrees C No sorption permitted Values for pH fixed at sample value CO_2 excluded from mole balance Carbonate concentration represents carbonate alkalinity Values for Eh calculated Davies equation used to compute activity coefficients No precipitation of solid phases permitted[1] All arsenic present as As(V).				
07 - Rocker	Ag-till	90	4-30-92	All[1]
07 - Rocker	Deep plow	150	4-29-92	All[1]
21 - Ramsay	Injection	150	4-29-92	All[1]
33 - Opportunity	Control	40	4-29-92	All[1]
33 - Opportunity	Topsoil	40	4-29-92	All[1]

9207a90 - Arsenic speciation; noredox, no sorption all As as As(V)

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	2.042E-03	-2.690	0.000E-01
160	Cd+2	3.890E-05	-4.410	3.900E-05
231	Cu+2	1.585E-02	-1.800	1.600E-02
150	Ca+2	2.512E-03	-2.600	2.500E-03
281	Fe+3	3.020E-02	-1.520	3.000E-02
600	Pb+2	9.120E-08	-7.040	9.200E-08
460	Mg+2	2.512E-03	-2.600	2.500E-03
471	Mn+3	1.288E-02	-1.890	1.300E-02
500	Na+1	8.913E-03	-2.050	9.000E-03
950	Zn+2	2.884E-02	-1.540	2.900E-02
180	Cl-1	7.943E-05	-4.100	7.900E-05
732	SO4-2	1.047E-01	-0.980	1.040E-01
61	H3AsO4	2.089E-03	-2.680	2.100E-03
30	Al+3	7.413E-03	-2.130	7.400E-03
410	K+1	8.913E-06	-5.050	8.900E-06
140	CO3-2	1.000E-08	-8.000	1.000E-08
270	F-1	5.248E-04	-3.280	5.300E-04
492	NO3-1	6.457E-05	-4.190	6.500E-05
580	PO4-3	9.550E-07	-6.020	9.500E-07
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

PO4-3	1.0	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	98.7	PERCENT BOUND IN SPECIES #2815801	FeH2PO4 +2
Cd+2	45.5	PERCENT BOUND IN SPECIES # 160	Cd+2
	37.0	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	17.4	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2
Cu+2	63.4	PERCENT BOUND IN SPECIES # 231	Cu+2
	36.6	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
Ca+2	63.5	PERCENT BOUND IN SPECIES # 150	Ca+2
	36.5	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
Fe+3	8.4	PERCENT BOUND IN SPECIES # 281	Fe+3
	5.2	PERCENT BOUND IN SPECIES #2813300	FeOH +2
	57.4	PERCENT BOUND IN SPECIES #2817320	FeSO4 +
	20.0	PERCENT BOUND IN SPECIES #2817321	Fe(SO4)2 -
	6.0	PERCENT BOUND IN SPECIES #2813304	Fe2(OH)2+4
	2.4	PERCENT BOUND IN SPECIES #2813305	Fe3(OH)4+5
Pb+2	34.0	PERCENT BOUND IN SPECIES # 600	Pb+2
	53.9	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ
	12.1	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2
Mg+2	66.6	PERCENT BOUND IN SPECIES # 460	Mg+2
	33.4	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Mn+3	100.0	PERCENT BOUND IN SPECIES # 471	Mn+3
Na+1	94.8	PERCENT BOUND IN SPECIES # 500	Na+1
	5.2	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Zn+2	52.9	PERCENT BOUND IN SPECIES # 950	Zn+2
	35.0	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	12.2	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
Cl-1	97.1	PERCENT BOUND IN SPECIES # 180	Cl-1
	1.1	PERCENT BOUND IN SPECIES #2811800	FeCl +2
	1.1	PERCENT BOUND IN SPECIES #9501800	ZnCl +
SO4-2	38.7	PERCENT BOUND IN SPECIES # 732	SO4-2
	2.2	PERCENT BOUND IN SPECIES # 307320	AlSO4 +
	3.8	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -
	16.6	PERCENT BOUND IN SPECIES #2817320	FeSO4 +
	11.5	PERCENT BOUND IN SPECIES #2817321	Fe(SO4)2 -
	5.6	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
	9.8	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	6.8	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
	2.9	PERCENT BOUND IN SPECIES #3307320	HSO4 -
H3AsO4	19.5	PERCENT BOUND IN SPECIES # 61	H3AsO4
	80.4	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
Al+3	36.0	PERCENT BOUND IN SPECIES # 30	Al+3
	6.1	PERCENT BOUND IN SPECIES # 302700	AlF +2

	30.9	PERCENT BOUND IN SPECIES # 307320	Al5O4 +
	26.9	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -
K+1			
	92.8	PERCENT BOUND IN SPECIES # 410	K+1
	7.2	PERCENT BOUND IN SPECIES #4107320	KSO4 -
CO3-2			
	99.9	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
F-1			
	84.6	PERCENT BOUND IN SPECIES # 302700	AlF +2
	2.9	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	12.4	PERCENT BOUND IN SPECIES #2812700	FeF +2
NO3-1			
	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
H2O			
	34.8	PERCENT BOUND IN SPECIES #2813300	FeOH +2
	4.2	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	39.6	PERCENT BOUND IN SPECIES #2813304	Fe2(OH)2+4
	21.3	PERCENT BOUND IN SPECIES #2813305	Fe3(OH)4+5
H+1			
	421.8	PERCENT BOUND IN SPECIES #2813300	FeOH +2
	51.5	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	479.5	PERCENT BOUND IN SPECIES #2813304	Fe2(OH)2+4
	258.2	PERCENT BOUND IN SPECIES #2813305	Fe3(OH)4+5
	452.7	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
580	PO4-3	9.500E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	3.900E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	1.600E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	2.500E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	3.000E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	9.200E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	2.500E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
471	Mn+3	1.300E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	9.000E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	2.900E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	7.900E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	1.040E-01	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	2.100E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	7.400E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.900E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	1.000E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	5.300E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	6.500E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	4.521E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	-3.731E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.521E-01 Sum of ANIONS 1.008E-01

PERCENT DIFFERENCE = 2.026E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 2.634E-01

EQUILIBRIUM pH = 2.690

DATE ID NUMBER: 930127
TIME ID NUMBER: 13112286

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
2003000	ALOH3(A)	-6.158	[1.000]	30	[3.000]	2	[-3.000]	330		
6003000	ALOHSO4	0.116	[-1.000]	330	[1.000]	30	[1.000]	732		
			[1.000]	2						
6003001	AL4(OH)10SO4	-13.147	[-10.000]	330	[4.000]	30	[1.000]	732		
			[10.000]	2						
6041000	ALUM K	-7.835	[1.000]	410	[1.000]	30	[2.000]	732		
			[12.000]	2						
6041001	ALUNITE	-3.195	[1.000]	410	[3.000]	30	[2.000]	732		
			[6.000]	2	[-6.000]	330				
6015000	ANHYDRITE	-0.685	[1.000]	150	[1.000]	732				
5015000	ARAGONITE	-14.302	[1.000]	150	[1.000]	140				
5046000	ARTINITE	-30.188	[-2.000]	330	[2.000]	460	[1.000]	140		
			[5.000]	2						
2003001	BOEHMITE	-4.354	[-3.000]	330	[1.000]	30	[2.000]	2		
2046000	BRUCITE	-14.758	[1.000]	460	[2.000]	2	[-2.000]	330		
5015001	CALCITE	-14.163	[1.000]	150	[1.000]	140				
2003002	DIASPORE	-2.649	[-3.000]	330	[1.000]	30	[2.000]	2		
5015002	DOLOMITE	-28.256	[1.000]	150	[1.000]	460	[2.000]	140		
6046000	EPSOMITE	-3.173	[1.000]	460	[1.000]	732	[7.000]	2		
2028100	FERRIHYDRITE	-0.691	[-3.000]	330	[1.000]	281	[3.000]	2		
4128100	FEOH)2.7CL.3	5.156	[-2.700]	330	[1.000]	281	[2.700]	2		
			[0.300]	180						
6028100	FE2(SO4)3	-17.188	[2.000]	281	[3.000]	732				
7015003	HYDRAPATITE	-36.907	[5.000]	150	[3.000]	580	[1.000]	2		
			[-1.000]	330						
7015002	FCO3APATITE	-66.667	[9.496]	150	[0.360]	500	[0.144]	460		
			[4.800]	580	[1.200]	140	[2.480]	270		
4215000	FLUORITE	-6.573	[1.000]	150	[2.000]	270				
2003003	GIBBSITE (C)	-4.548	[-3.000]	330	[1.000]	30	[3.000]	2		
3003000	Al2O3	-14.531	[2.000]	30	[3.000]	2	[-6.000]	330		
2028102	GOETHITE	3.701	[-3.000]	330	[1.000]	281	[2.000]	2		
6015001	GYPSUM	-0.478	[1.000]	150	[1.000]	732	[2.000]	2		
4150000	HALITE	-8.048	[1.000]	500	[1.000]	180				
3028100	HEMATITE	12.413	[-6.000]	330	[2.000]	281	[3.000]	2		
5015003	HUNTITE	-60.523	[3.000]	460	[1.000]	150	[4.000]	140		
5046001	HYDRMAGNESIT	-79.676	[5.000]	460	[4.000]	140	[-2.000]	330		
			[6.000]	2						
6050000	JAROSITE NA	9.606	[-6.000]	330	[1.000]	500	[3.000]	281		
			[2.000]	732	[6.000]	2				
6041002	JAROSITE K	10.192	[-6.000]	330	[1.000]	410	[3.000]	281		
			[2.000]	732	[6.000]	2				
6028101	JAROSITE H	10.024	[-5.000]	330	[3.000]	281	[2.000]	732		
			[7.000]	2						

ID #	NAME	Sat. Index	Stoichiometry in [brackets]								
3028101	MAGHEMITE	2.019	[-6.000]	330	[2.000]	281	[3.000]	2			
5046002	MAGNESITE	-14.589	[1.000]	460	[1.000]	140					
6050001	MIRABILITE	-5.281	[2.000]	500	[1.000]	732	[10.000]	2			
3050000	NATRON	-22.400	[2.000]	500	[1.000]	140	[10.000]	2			
5046003	NESQUEHONITE	-17.001	[1.000]	460	[1.000]	140	[3.000]	2			
7028100	STRENGITE	0.205	[1.000]	281	[1.000]	580	[2.000]	2			
6050002	THENARDITE	-6.200	[2.000]	500	[1.000]	732					
5050001	THERMONATR	-23.822	[2.000]	500	[1.000]	140	[1.000]	2			
3047100	BIXBYITE	10.437	[-6.000]	330	[2.000]	471	[3.000]	2			
2047100	MANGANITE	5.150	[-3.000]	330	[1.000]	471	[2.000]	2			
6047100	MN2(SO4)3	-6.476	[2.000]	471	[3.000]	732					
4123100	MELANOTHALLI	-14.800	[1.000]	231	[2.000]	180					
5023100	CUCO3	-12.202	[1.000]	231	[1.000]	140					
4223100	CUF2	-16.096	[1.000]	231	[2.000]	270					
4223101	CUF2, 2H2O	-12.169	[1.000]	231	[2.000]	270	[2.000]	2			
2023100	CU(OH)2	-5.821	[-2.000]	330	[1.000]	231	[2.000]	2			
4123101	ATACAMITE	-8.646	[-3.000]	330	[2.000]	231	[3.000]	2			
			[1.000]	180							
5123100	CU2(OH)3NO3	-10.618	[-3.000]	330	[2.000]	231	[3.000]	2			
			[1.000]	492							
6023100	ANTLERITE	-7.168	[-4.000]	330	[3.000]	231	[4.000]	2			
			[1.000]	732							
6023101	BROCHANTITE	-11.398	[-6.000]	330	[4.000]	231	[6.000]	2			
			[1.000]	732							
6023102	LANGITE	-12.850	[-6.000]	330	[4.000]	231	[7.000]	2			
			[1.000]	732							
2023101	TENORITE	-4.799	[-2.000]	330	[1.000]	231	[1.000]	2			
6023103	CUOCUSO4	-13.226	[-2.000]	330	[2.000]	231	[1.000]	2			
			[1.000]	732							
7023100	CU3(PO4)2	-15.475	[3.000]	231	[2.000]	580					
7023101	CU3(PO4)2,3W	-17.209	[3.000]	231	[2.000]	580	[3.000]	2			
6023104	CUSO4	-7.527	[1.000]	231	[1.000]	732					
6023105	CHALCANTHITE	-1.885	[1.000]	231	[1.000]	732	[5.000]	2			
3023100	CUPRICFERIT	5.346	[-8.000]	330	[1.000]	231	[2.000]	281			
			[4.000]	2							
4195000	ZNCL2	-17.921	[1.000]	950	[2.000]	180					
5095000	SMITHSONITE	-11.653	[1.000]	950	[1.000]	140					
5095001	ZNCO3, 1H2O	-11.395	[1.000]	950	[1.000]	140	[1.000]	2			
4295000	ZNF2	-15.017	[1.000]	950	[2.000]	270					
2095000	ZN(OH)2 (A)	-9.451	[-2.000]	330	[1.000]	950	[2.000]	2			
2095001	ZN(OH)2 (C)	-9.201	[-2.000]	330	[1.000]	950	[2.000]	2			
2095002	ZN(OH)2 (B)	-8.751	[-2.000]	330	[1.000]	950	[2.000]	2			
2095003	ZN(OH)2 (G)	-8.711	[-2.000]	330	[1.000]	950	[2.000]	2			
2095004	ZN(OH)2 (E)	-8.501	[-2.000]	330	[1.000]	950	[2.000]	2			
4195001	ZN2(OH)3CL	-16.148	[-3.000]	330	[2.000]	950	[3.000]	2			
			[1.000]	180							
4195002	ZN5(OH)8CL2	-37.396	[-8.000]	330	[5.000]	950	[8.000]	2			
			[2.000]	180							
6095000	ZN2(OH)2SO4	-8.839	[-2.000]	330	[2.000]	950	[2.000]	2			
			[1.000]	732							
6095001	ZN4(OH)6SO4	-23.742	[-6.000]	330	[4.000]	950	[6.000]	2			
			[1.000]	732							

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
5195000	ZNNO3)2,6H2O	-14.484	[1.000]	950	[2.000]	492	[6.000]	2				
2095005	ZNO(ACTIVE)	-8.310	[-2.000]	330	[1.000]	950	[1.000]	2				
2095006	ZINCITE	-8.140	[-2.000]	330	[1.000]	950	[1.000]	2				
6095002	ZN3O(SO4)2	-24.695	[-2.000]	330	[3.000]	950	[2.000]	732				
			[1.000]	2								
7095000	ZN3(PO4),4W	-19.754	[3.000]	950	[2.000]	580	[4.000]	2				
6095003	ZINCOSITE	-7.348	[1.000]	950	[1.000]	732						
6095004	ZNSO4, 1H2O	-3.769	[1.000]	950	[1.000]	732	[1.000]	2				
6095005	BIANCHITE	-2.582	[1.000]	950	[1.000]	732	[6.000]	2				
6095006	GOSLARITE	-2.389	[1.000]	950	[1.000]	732	[7.000]	2				
5016000	OTAVITE	-10.850	[1.000]	160	[1.000]	140						
4116000	CDCL2	-13.147	[1.000]	160	[2.000]	180						
4116001	CDCL2, 1H2O	-12.119	[1.000]	160	[2.000]	180	[1.000]	2				
4116002	CDCL2,2.5H2O	-11.891	[1.000]	160	[2.000]	180	[2.500]	2				
4216000	CDF2	-16.494	[1.000]	160	[2.000]	270						
2016000	CD(OH)2 (A)	-13.668	[-2.000]	330	[1.000]	160	[2.000]	2				
2016001	CD(OH)2 (C)	-13.588	[-2.000]	330	[1.000]	160	[2.000]	2				
4116003	CDOHCL	-10.402	[-1.000]	330	[1.000]	160	[1.000]	2				
			[1.000]	180								
6016000	CD3(OH)4SO4	-29.710	[-4.000]	330	[3.000]	160	[4.000]	2				
			[1.000]	732								
6016001	CD3OH2(SO4)2	-21.196	[-2.000]	330	[3.000]	160	[2.000]	2				
			[2.000]	732								
6016002	CD4(OH)6SO4	-35.488	[-6.000]	330	[4.000]	160	[6.000]	2				
			[1.000]	732								
2016002	MONTEPONITE	-15.056	[-2.000]	330	[1.000]	160	[1.000]	2				
7016000	CD3(PO4)2	-27.997	[3.000]	160	[2.000]	580						
6016003	CDSO4	-7.174	[1.000]	160	[1.000]	732						
6016004	CDSO4, 1H2O	-5.619	[1.000]	160	[1.000]	732	[1.000]	2				
6016005	CDSO4,2.7H2O	-5.405	[1.000]	160	[1.000]	732	[2.670]	2				
4160000	COTUNNITE	-11.811	[1.000]	600	[2.000]	180						
4160001	MATLOCKITE	-9.975	[1.000]	600	[1.000]	180	[1.000]	270				
4160002	PHOSGENITE	-24.115	[2.000]	600	[2.000]	180	[1.000]	140				
5060000	CERRUSITE	-14.214	[1.000]	600	[1.000]	140						
4260000	PBF2	-14.788	[1.000]	600	[2.000]	270						
2060000	MASSICOT	-15.601	[-2.000]	330	[1.000]	600	[1.000]	2				
2060001	LITHARGE	-15.411	[-2.000]	330	[1.000]	600	[1.000]	2				
2060002	PBO, .3H2O	-15.671	[-2.000]	330	[1.000]	600	[1.330]	2				
5060001	PB2OCO3	-29.535	[-2.000]	330	[2.000]	600	[1.000]	2				
			[1.000]	140								
6060000	LARNAKITE	-12.439	[-2.000]	330	[2.000]	600	[1.000]	732				
			[1.000]	2								
6060001	PB3O2SO4	-25.809	[-4.000]	330	[3.000]	600	[1.000]	732				
			[2.000]	2								
6060002	PB4O3SO4	-40.200	[-6.000]	330	[4.000]	600	[1.000]	732				
			[3.000]	2								
7060001	CLPYROMORPH	-27.150	[5.000]	600	[3.000]	580	[1.000]	180				
7060002	HXYPYROMORPH	-41.845	[-1.000]	330	[5.000]	600	[3.000]	580				
			[1.000]	2								
5060002	PB3O2CO3	-43.745	[-4.000]	330	[3.000]	600	[1.000]	140				
			[2.000]	2								

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
7060003	PLUMBGUMMITE	-18.020	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-25.253	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-23.171	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-2.238	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-10.842	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-10.260	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-21.122	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-39.920	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-31.583	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-39.205	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-13.833	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-23.925	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-13.415	[2.000] 61 [-3.000] 2
7060006	PBHPO4	-9.185	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-24.360	[3.000] 600 [2.000] 580
7203000	ALASO4.2W	-3.937	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-22.976	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-4.356	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	0.441	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7260000	PB3(ASO4)2	-20.588	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-11.369	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-30.782	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-20.661	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-19.474	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-25.848	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	-6.325	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-21.460	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	2.830	[-3.000] 330 [1.000] 281 [2.000] 2

PC MINTEQA2 v3.10 DATE OF CALCULATIONS: 27-JAN-93 TIME: 13: 2:46

9207d150 - Arsenic speciation; noredox, no fe-oxide, all As as As(V)

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	4.677E-08	-7.330	0.000E-01
160	Cd+2	3.890E-05	-4.410	2.000E-08
231	Cu+2	1.585E-02	-1.800	1.500E-07
150	Ca+2	2.512E-03	-2.600	2.500E-03
281	Fe+3	3.020E-02	-1.520	5.500E-07
600	Pb+2	9.120E-08	-7.040	8.200E-09
460	Mg+2	2.512E-03	-2.600	8.500E-04
471	Mn+3	1.288E-02	-1.890	3.500E-08
500	Na+1	8.913E-03	-2.050	5.300E-03
950	Zn+2	2.884E-02	-1.540	7.700E-06
180	C1-1	7.943E-05	-4.100	1.300E-03
732	SO4-2	1.047E-01	-0.980	5.400E-03
61	H3AsO4	2.089E-03	-2.680	2.570E-07
30	Al+3	7.413E-03	-2.130	2.100E-06
410	K+1	8.913E-06	-5.050	1.800E-04
140	CO3-2	1.000E-08	-8.000	1.000E-03
270	F-1	5.248E-04	-3.280	2.400E-04
492	NO3-1	6.457E-05	-4.190	9.700E-06
580	PO4-3	9.550E-07	-6.020	4.000E-06
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

PO4-3	24.2	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	8.0	PERCENT BOUND IN SPECIES #4605802 MgHPO4 AQ	
	16.9	PERCENT BOUND IN SPECIES #1505800 CaHPO4 AQ	
	48.1	PERCENT BOUND IN SPECIES #3305800 HPO4 -2	
Cd+2	58.2	PERCENT BOUND IN SPECIES # 160	Cd+2
	4.2	PERCENT BOUND IN SPECIES #1601800 CdCl +1	
	25.9	PERCENT BOUND IN SPECIES #1607320 CdSO4 AQ	
	3.6	PERCENT BOUND IN SPECIES #1601400 CdHCO3 +1	
	6.7	PERCENT BOUND IN SPECIES #1601401 CdCO3 AQ	
	1.3	PERCENT BOUND IN SPECIES #1607321 Cd(SO4)2-2	
Cu+2	10.3	PERCENT BOUND IN SPECIES # 231	Cu+2
	25.2	PERCENT BOUND IN SPECIES #2311400 CuCO3 AQ	
	1.5	PERCENT BOUND IN SPECIES #2313300 CuOH +1	
	57.1	PERCENT BOUND IN SPECIES #2313301 Cu(OH)2 AQ	
	3.2	PERCENT BOUND IN SPECIES #2317320 CuSO4 AQ	
	2.5	PERCENT BOUND IN SPECIES #2311402 CuHCO3 +1	
Ca+2	75.6	PERCENT BOUND IN SPECIES # 150	Ca+2
	23.8	PERCENT BOUND IN SPECIES #1507320 CaSO4 AQ	
Fe+3	78.6	PERCENT BOUND IN SPECIES #2813301	FeOH2 +1
	17.2	PERCENT BOUND IN SPECIES #2813302 FeOH3 AQ	
	4.2	PERCENT BOUND IN SPECIES #2813303 FeOH4 -1	
Pb+2	9.5	PERCENT BOUND IN SPECIES # 600	Pb+2
	2.6	PERCENT BOUND IN SPECIES #6003300 PbOH +1	
	8.2	PERCENT BOUND IN SPECIES #6007320 PbSO4 AQ	
	75.2	PERCENT BOUND IN SPECIES #6001401 PbCO3 AQ	
	3.7	PERCENT BOUND IN SPECIES #6001402 PbHCO3 +1	
Mg+2	77.5	PERCENT BOUND IN SPECIES # 460	Mg+2
	21.3	PERCENT BOUND IN SPECIES #4607320 MgSO4 AQ	
Mn+3	100.0	PERCENT BOUND IN SPECIES # 471	Mn+3
Na+1	98.6	PERCENT BOUND IN SPECIES # 500	Na+1
	1.3	PERCENT BOUND IN SPECIES #5007320 NaSO4 -1	
Zn+2	64.4	PERCENT BOUND IN SPECIES # 950	Zn+2
	1.0	PERCENT BOUND IN SPECIES #9503300 ZnOH +1	
	23.3	PERCENT BOUND IN SPECIES #9507320 ZnSO4 AQ	
	4.0	PERCENT BOUND IN SPECIES #9501400 ZnHCO3 +1	
	5.9	PERCENT BOUND IN SPECIES #9501401 ZnCO3 AQ	
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
SO4-2	84.3	PERCENT BOUND IN SPECIES # 732	SO4-2
	3.3	PERCENT BOUND IN SPECIES #4607320 MgSO4 AQ	
	11.0	PERCENT BOUND IN SPECIES #1507320 CaSO4 AQ	
	1.3	PERCENT BOUND IN SPECIES #5007320 NaSO4 -1	
H3AsO4	15.2	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	84.8	PERCENT BOUND IN SPECIES #3300612 HAsO4 -2	

Al+3	51.8	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	5.6	PERCENT BOUND IN SPECIES # 302701	AlF2 +
	18.4	PERCENT BOUND IN SPECIES # 302702	AlF3 AQ
	2.1	PERCENT BOUND IN SPECIES # 302703	AlF4 -
	21.1	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
K+1	98.2	PERCENT BOUND IN SPECIES # 410	K+1
	1.8	PERCENT BOUND IN SPECIES #4107320	KSO4 -
CO3-2	1.0	PERCENT BOUND IN SPECIES #1501400	CaHCO3 +
	89.8	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	8.2	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
F-1	95.9	PERCENT BOUND IN SPECIES # 270	F-1
	2.4	PERCENT BOUND IN SPECIES #4602700	MgF +
NO3-1	100.0	PERCENT BOUND IN SPECIES # 492	NO3-1
H2O	3.3	PERCENT BOUND IN SPECIES #3300020	OH-
	57.9	PERCENT BOUND IN SPECIES # 303302	Al(OH)4 -
	17.7	PERCENT BOUND IN SPECIES # 303303	Al(OH)3 AQ
	11.5	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	3.8	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
	1.2	PERCENT BOUND IN SPECIES #2813303	FeOH4 -
	2.3	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
	1.0	PERCENT BOUND IN SPECIES #9503300	ZnOH +
H+1	83.5	PERCENT BOUND IN SPECIES #3301400	HCO3 -
	15.3	PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
580	PO4-3	4.000E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	2.000E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	1.500E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	2.500E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	5.500E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	8.200E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	8.500E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
471	Mn+3	3.500E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	5.300E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	7.700E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.300E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	5.400E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	2.570E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	2.100E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	1.800E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	1.000E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	2.400E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	9.700E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	7.509E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	1.076E-03	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.054E-02 Sum of ANIONS 1.162E-02

PERCENT DIFFERENCE = 4.884E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.819E-02

EQUILIBRIUM pH = 7.330

DATE ID NUMBER: 930127
TIME ID NUMBER: 13031348

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
2003000	ALOH3(A)	-0.732	[1.000]	30	[3.000]	2	[-3.000]	330		
6003000	ALOHSO4	-4.358	[-1.000]	330	[1.000]	30	[1.000]	732		
			[1.000]	2						
6003001	AL4(OH)10SO4	-1.344	[-10.000]	330	[4.000]	30	[1.000]	732		
			[10.000]	2						
6041000	ALUM K	-16.136	[1.000]	410	[1.000]	30	[2.000]	732		
			[12.000]	2						
6041001	ALUNITE	-0.663	[1.000]	410	[3.000]	30	[2.000]	732		
			[6.000]	2	[-6.000]	330				
6015000	ANHYDRITE	-0.896	[1.000]	150	[1.000]	732				
5015000	ARAGONITE	-0.726	[1.000]	150	[1.000]	140				
5046000	ARTINITE	-7.876	[-2.000]	330	[2.000]	460	[1.000]	140		
			[5.000]	2						
2003001	BOEHMITE	1.070	[-3.000]	330	[1.000]	30	[2.000]	2		
2046000	BRUCITE	-5.547	[1.000]	460	[2.000]	2	[-2.000]	330		
5015001	CALCITE	-0.587	[1.000]	150	[1.000]	140				
2003002	DIASPORE	2.775	[-3.000]	330	[1.000]	30	[2.000]	2		
5015002	DOLOMITE	-1.582	[1.000]	150	[1.000]	460	[2.000]	140		
6046000	EPSOMITE	-3.852	[1.000]	460	[1.000]	732	[7.000]	2		
2028100	FERRIHYDRITE	1.686	[-3.000]	330	[1.000]	281	[3.000]	2		
4128100	FEOH)2.7CL.3	6.535	[-2.700]	330	[1.000]	281	[2.700]	2		
			[0.300]	180						
6028100	FE2(SO4)3	-42.133	[2.000]	281	[3.000]	732				
7015003	HYDRAPATITE	3.846	[5.000]	150	[3.000]	580	[1.000]	2		
			[-1.000]	330						
7015002	FCO3APATITE	15.857	[9.496]	150	[0.360]	500	[0.144]	460		
			[4.800]	580	[1.200]	140	[2.480]	270		
4215000	FLUORITE	0.599	[1.000]	150	[2.000]	270				
2003003	GIBBSITE (C)	0.878	[-3.000]	330	[1.000]	30	[3.000]	2		
3003000	A12O3	-3.684	[2.000]	30	[3.000]	2	[-6.000]	330		
2028102	GOETHITE	6.077	[-3.000]	330	[1.000]	281	[2.000]	2		
6015001	GYPSUM	-0.685	[1.000]	150	[1.000]	732	[2.000]	2		
4150000	HALITE	-6.867	[1.000]	500	[1.000]	180				
3028100	HEMATITE	17.163	[-6.000]	330	[2.000]	281	[3.000]	2		
5015003	HUNTITE	-7.654	[3.000]	460	[1.000]	150	[4.000]	140		
5046001	HYDRMAGNESIT	-18.070	[5.000]	460	[4.000]	140	[-2.000]	330		
			[6.000]	2						
6050000	JAROSITE NA	1.450	[-6.000]	330	[1.000]	500	[3.000]	281		
			[2.000]	732	[6.000]	2				
6041002	JAROSITE K	3.579	[-6.000]	330	[1.000]	410	[3.000]	281		
			[2.000]	732	[6.000]	2				
6028101	JAROSITE H	-2.640	[-5.000]	330	[3.000]	281	[2.000]	732		
			[7.000]	2						

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
3028101	MAGHEMITE	6.769	[-6.000]	330	[2.000]	281	[3.000]	2				
5046002	MAGNESITE	-1.491	[1.000]	460	[1.000]	140						
6050001	MIRABILITE	-6.143	[2.000]	500	[1.000]	732	[10.000]	2				
3050000	NATRON	-9.475	[2.000]	500	[1.000]	140	[10.000]	2				
5046003	NESQUEHONITE	-3.899	[1.000]	460	[1.000]	140	[3.000]	2				
7028100	STRENGITE	0.022	[1.000]	281	[1.000]	580	[2.000]	2				
6050002	THENARDITE	-7.077	[2.000]	500	[1.000]	732						
5050001	THERMONATR	-10.910	[2.000]	500	[1.000]	140	[1.000]	2				
3047100	BIXBYITE	28.626	[-6.000]	330	[2.000]	471	[3.000]	2				
2047100	MANGANITE	14.246	[-3.000]	330	[1.000]	471	[2.000]	2				
6047100	MN2(SO4)3	-17.981	[2.000]	471	[3.000]	732						
4123100	MELANOTHALLI	-17.664	[1.000]	231	[2.000]	180						
5023100	CUCO3	-4.520	[1.000]	231	[1.000]	140						
4223100	CUF2	-14.818	[1.000]	231	[2.000]	270						
4223101	CUF2, 2H2O	-10.888	[1.000]	231	[2.000]	270	[2.000]	2				
2023100	CU(OH)2	-2.025	[-2.000]	330	[1.000]	231	[2.000]	2				
4123101	ATACAMITE	-4.385	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	180								
5123100	CU2(OH)3NO3	-8.412	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	492								
6023100	ANTLERITE	-5.682	[-4.000]	330	[3.000]	231	[4.000]	2				
			[1.000]	732								
6023101	BROCHANTITE	-6.117	[-6.000]	330	[4.000]	231	[6.000]	2				
			[1.000]	732								
6023102	LANGITE	-7.567	[-6.000]	330	[4.000]	231	[7.000]	2				
			[1.000]	732								
2023101	TENORITE	-1.005	[-2.000]	330	[1.000]	231	[1.000]	2				
6023103	CUOCUSO4	-15.536	[-2.000]	330	[2.000]	231	[1.000]	2				
			[1.000]	732								
7023100	CU3(PO4)2	-9.216	[3.000]	231	[2.000]	580						
7023101	CU3(PO4)2,3W	-10.947	[3.000]	231	[2.000]	580	[3.000]	2				
6023104	CUSO4	-13.631	[1.000]	231	[1.000]	732						
6023105	CHALCANTHITE	-7.982	[1.000]	231	[1.000]	732	[5.000]	2				
3023100	CUPRICFERIT	13.889	[-8.000]	330	[1.000]	231	[2.000]	281				
			[4.000]	2								
4195000	ZNCL2	-18.458	[1.000]	950	[2.000]	180						
5095000	SMITHSONITE	-1.644	[1.000]	950	[1.000]	140						
5095001	ZNCO3, 1H2O	-1.384	[1.000]	950	[1.000]	140	[1.000]	2				
4295000	ZNF2	-11.412	[1.000]	950	[2.000]	270						
2095000	ZN(OH)2 (A)	-3.329	[-2.000]	330	[1.000]	950	[2.000]	2				
2095001	ZN(OH)2 (C)	-3.079	[-2.000]	330	[1.000]	950	[2.000]	2				
2095002	ZN(OH)2 (B)	-2.629	[-2.000]	330	[1.000]	950	[2.000]	2				
2095003	ZN(OH)2 (G)	-2.589	[-2.000]	330	[1.000]	950	[2.000]	2				
2095004	ZN(OH)2 (E)	-2.379	[-2.000]	330	[1.000]	950	[2.000]	2				
4195001	ZN2(OH)3CL	-7.233	[-3.000]	330	[2.000]	950	[3.000]	2				
			[1.000]	180								
4195002	ZN5(OH)8CL2	-13.444	[-8.000]	330	[5.000]	950	[8.000]	2				
			[2.000]	180								
6095000	ZN2(OH)2SO4	-6.494	[-2.000]	330	[2.000]	950	[2.000]	2				
			[1.000]	732								
6095001	ZN4(OH)6SO4	-9.152	[-6.000]	330	[4.000]	950	[6.000]	2				
			[1.000]	732								

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5195000	ZNNO3)2,6H2O	-19.123	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-2.189	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-2.019	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-26.128	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-6.508	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-11.125	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-7.545	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-6.350	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-6.156	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	-0.533	[1.000] 160 [1.000] 140
4116000	CDCL2	-13.377	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-12.347	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-12.118	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-12.581	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-7.239	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-7.159	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-7.303	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-20.321	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-21.707	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-19.670	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-8.628	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-13.836	[3.000] 160 [2.000] 580
6016003	CDSO4	-10.644	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-9.087	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-8.872	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-10.462	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-6.554	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-10.871	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-2.318	[1.000] 600 [1.000] 140
4260000	PBF2	-9.296	[1.000] 600 [2.000] 270
2060000	MASSICOT	-7.593	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-7.403	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-7.664	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-9.632	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-6.323	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-11.686	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-18.070	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	1.872	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-9.494	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2
5060002	PB3O2CO3	-15.835	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
7060003	PLUMBGUMMITE	1.139	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-13.431	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-5.918	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-4.129	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-2.834	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-5.581	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-8.435	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-8.120	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-15.567	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-17.070	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-2.355	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-4.765	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-31.808	[2.000] 61 [-3.000] 2
7060006	PBHPO4	-3.739	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-5.461	[3.000] 600 [2.000] 580
7203000	ALASO4.2W	-7.707	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-12.301	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-11.364	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	-6.377	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7260000	PB3(ASO4)2	-14.959	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-11.396	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-21.094	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-10.972	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-10.265	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-5.792	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	7.634	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-10.051	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	5.206	[-3.000] 330 [1.000] 281 [2.000] 2

9221i150 - Arsenic speciation; no redox, no sorption all As as As(V)

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	7.413E-09	-8.130	0.000E-01
160	Cd+2	3.890E-05	-4.410	2.000E-08
231	Cu+2	1.585E-02	-1.800	7.200E-07
150	Ca+2	2.512E-03	-2.600	9.100E-04
281	Fe+3	3.020E-02	-1.520	3.000E-07
600	Pb+2	9.120E-08	-7.040	4.800E-09
460	Mg+2	2.512E-03	-2.600	6.100E-04
471	Mn+3	1.288E-02	-1.890	1.700E-06
500	Na+1	8.913E-03	-2.050	1.800E-02
950	Zn+2	2.884E-02	-1.540	3.600E-07
180	Cl-1	7.943E-05	-4.100	1.130E-03
732	SO4-2	1.047E-01	-0.980	7.900E-03
61	H3AsO4	2.089E-03	-2.680	6.140E-06
30	Al+3	7.413E-03	-2.130	2.100E-06
410	K+1	8.913E-06	-5.050	4.800E-05
140	CO3-2	1.000E-08	-8.000	2.000E-03
270	F-1	5.248E-04	-3.280	9.500E-05
492	NO3-1	6.457E-05	-4.190	2.100E-04
580	PO4-3	9.550E-07	-6.020	7.700E-06
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

PO4-3	5.5	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	2.5	PERCENT BOUND IN SPECIES #4605800	MgPO4 -
	6.8	PERCENT BOUND IN SPECIES #4605802	MgHPO4 AQ
	7.2	PERCENT BOUND IN SPECIES #1505800	CaHPO4 AQ
	2.7	PERCENT BOUND IN SPECIES #1505801	CaPO4 -
	1.3	PERCENT BOUND IN SPECIES #5005800	NaHPO4 -
	73.8	PERCENT BOUND IN SPECIES #3305800	HPO4 -2
Cd+2	31.6	PERCENT BOUND IN SPECIES # 160	Cd+2
	1.8	PERCENT BOUND IN SPECIES #1601800	CdCl +
	18.1	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	3.8	PERCENT BOUND IN SPECIES #1601400	CdHCO3 +
	43.0	PERCENT BOUND IN SPECIES #1601401	CdCO3 AQ
	1.4	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2
Cu+2	12.6	PERCENT BOUND IN SPECIES #2311400	CuCO3 AQ
	86.0	PERCENT BOUND IN SPECIES #2313301	Cu(OH)2 AQ
Ca+2	70.1	PERCENT BOUND IN SPECIES # 150	Ca+2
	28.5	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
Fe+3	22.3	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	30.0	PERCENT BOUND IN SPECIES #2813302	FeOH3 AQ
	47.7	PERCENT BOUND IN SPECIES #2813303	FeOH4 -
Pb+2	4.5	PERCENT BOUND IN SPECIES #6001400	Pb(CO3)2-2
	1.6	PERCENT BOUND IN SPECIES #6003300	PbOH +
	1.1	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ
	91.0	PERCENT BOUND IN SPECIES #6001401	PbCO3 AQ
Mg+2	72.7	PERCENT BOUND IN SPECIES # 460	Mg+2
	25.7	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Mn+3	100.0	PERCENT BOUND IN SPECIES # 471	Mn+3
Na+1	98.0	PERCENT BOUND IN SPECIES # 500	Na+1
	1.9	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Zn+2	29.7	PERCENT BOUND IN SPECIES # 950	Zn+2
	2.7	PERCENT BOUND IN SPECIES #9503300	ZnOH +
	3.6	PERCENT BOUND IN SPECIES #9503301	Zn(OH)2 AQ
	13.9	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	3.5	PERCENT BOUND IN SPECIES #9501400	ZnHCO3 +
	32.2	PERCENT BOUND IN SPECIES #9501401	ZnCO3 AQ
	13.5	PERCENT BOUND IN SPECIES #9501402	Zn(CO3)2-2
Cl-1	100.0	PERCENT BOUND IN SPECIES # 180	Cl-1
SO4-2	90.5	PERCENT BOUND IN SPECIES # 732	SO4-2
	2.0	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
	3.3	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
	4.2	PERCENT BOUND IN SPECIES #5007320	NaSO4 -

```
H3AsO4
                  2.6     PERCENT BOUND IN SPECIES #3300611   H2AsO4 -
 97.4     PERCENT BOUND IN SPECIES #3300612   HAsO4 -2

Al+3
                 94.0     PERCENT BOUND IN SPECIES # 303302   Al(OH)4 -
  5.9     PERCENT BOUND IN SPECIES # 303303   Al(OH)3 AQ

K+1
                 97.4     PERCENT BOUND IN SPECIES #    410   K+1
  2.6     PERCENT BOUND IN SPECIES #4107320   KSO4 -

CO3-2
                 95.8     PERCENT BOUND IN SPECIES #3301400   HCO3 -
  1.4     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ

F-1
                 98.0     PERCENT BOUND IN SPECIES #    270   F-1
  1.5     PERCENT BOUND IN SPECIES #4602700   MgF +

NO3-1
                100.0     PERCENT BOUND IN SPECIES #    492   NO3-1

H2O
                 13.0     PERCENT BOUND IN SPECIES #3300020   OH-
 64.8     PERCENT BOUND IN SPECIES # 303302   Al(OH)4 -
  3.1     PERCENT BOUND IN SPECIES # 303303   Al(OH)3 AQ
  1.1     PERCENT BOUND IN SPECIES #2813301   FeOH2 +
  2.2     PERCENT BOUND IN SPECIES #2813302   FeOH3 AQ
  4.7     PERCENT BOUND IN SPECIES #2813303   FeOH4 -
 10.2     PERCENT BOUND IN SPECIES #2313301   Cu(OH)2 AQ

H+1
                 96.8     PERCENT BOUND IN SPECIES #3301400   HCO3 -
  2.7     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
580	PO4-3	7.700E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	2.000E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	7.200E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	9.100E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	3.000E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	4.800E-09	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	6.100E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
471	Mn+3	1.700E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	1.800E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	3.600E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.130E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	7.900E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	6.140E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	2.100E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	4.800E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	2.000E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	9.500E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	2.100E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	1.219E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	1.980E-03	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.988E-02 Sum of ANIONS 1.805E-02

PERCENT DIFFERENCE = 4.810E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 2.723E-02

EQUILIBRIUM pH = 8.130

DATE ID NUMBER: 930127
TIME ID NUMBER: 13204261

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
2003000	ALOH3(A)	-1.283	[1.000] 30 [3.000] 2 [-3.000] 330
6003000	ALOHSO4	-6.355	[-1.000] 330 [1.000] 30 [1.000] 732 [1.000] 2
6003001	AL4(OH)10SO4	-4.994	[-10.000] 330 [4.000] 30 [1.000] 732 [10.000] 2
6041000	ALUM K	-19.368	[1.000] 410 [1.000] 30 [2.000] 732 [12.000] 2
6041001	ALUNITE	-4.996	[1.000] 410 [3.000] 30 [2.000] 732 [6.000] 2 [-6.000] 330
6015000	ANHYDRITE	-1.256	[1.000] 150 [1.000] 732
5015000	ARAGONITE	-0.121	[1.000] 150 [1.000] 140
5046000	ARTINITE	-5.586	[-2.000] 330 [2.000] 460 [1.000] 140 [5.000] 2
2003001	BOEHMITE	0.519	[-3.000] 330 [1.000] 30 [2.000] 2
2046000	BRUCITE	-4.162	[1.000] 460 [2.000] 2 [-2.000] 330
5015001	CALCITE	0.018	[1.000] 150 [1.000] 140
2003002	DIASPORE	2.224	[-3.000] 330 [1.000] 30 [2.000] 2
5015002	DOLOMITE	-0.073	[1.000] 150 [1.000] 460 [2.000] 140
6046000	EPSOMITE	-3.913	[1.000] 460 [1.000] 732 [7.000] 2
2028100	FERRIHYDRITE	1.666	[-3.000] 330 [1.000] 281 [3.000] 2
4128100	FEOH)2.7CL.3	6.253	[-2.700] 330 [1.000] 281 [2.700] 2 [0.300] 180
6028100	FE2(SO4)3	-46.511	[2.000] 281 [3.000] 732
7015003	HYDRAPATITE	5.761	[5.000] 150 [3.000] 580 [1.000] 2 [-1.000] 330
7015002	FCO3APATITE	17.369	[9.496] 150 [0.360] 500 [0.144] 460 [4.800] 580 [1.200] 140 [2.480] 270
4215000	FLUORITE	-0.722	[1.000] 150 [2.000] 270
2003003	GIBBSITE (C)	0.327	[-3.000] 330 [1.000] 30 [3.000] 2
3003000	AL2O3	-4.786	[2.000] 30 [3.000] 2 [-6.000] 330
2028102	GOETHITE	6.057	[-3.000] 330 [1.000] 281 [2.000] 2
6015001	GYPSUM	-1.045	[1.000] 150 [1.000] 732 [2.000] 2
4150000	HALITE	-6.420	[1.000] 500 [1.000] 180
3028100	HEMATITE	17.122	[-6.000] 330 [2.000] 281 [3.000] 2
5015003	HUNTITE	-4.335	[3.000] 460 [1.000] 150 [4.000] 140
5046001	HYDRMAGNESIT	-13.067	[5.000] 460 [4.000] 140 [-2.000] 330 [6.000] 2
6050000	JAROSITE NA	-0.185	[-6.000] 330 [1.000] 500 [3.000] 281 [2.000] 732 [6.000] 2
6041002	JAROSITE K	0.838	[-6.000] 330 [1.000] 410 [3.000] 281 [2.000] 732 [6.000] 2
6028101	JAROSITE H	-5.593	[-5.000] 330 [3.000] 281 [2.000] 732 [7.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
3028101	MAGHEMITE	6.728	[-6.000]	330	[2.000]	281	[3.000]	2				
5046002	MAGNESITE	-0.586	[1.000]	460	[1.000]	140						
6050001	MIRABILITE	-4.955	[2.000]	500	[1.000]	732	[10.000]	2				
3050000	NATRON	-7.322	[2.000]	500	[1.000]	140	[10.000]	2				
5046003	NESQUEHONITE	-2.995	[1.000]	460	[1.000]	140	[3.000]	2				
7028100	STRENGITE	-1.170	[1.000]	281	[1.000]	580	[2.000]	2				
6050002	THENARDITE	-5.888	[2.000]	500	[1.000]	732						
5050001	THERMONATR	-8.756	[2.000]	500	[1.000]	140	[1.000]	2				
3047100	BIXBYITE	36.609	[-6.000]	330	[2.000]	471	[3.000]	2				
2047100	MANGANITE	18.237	[-3.000]	330	[1.000]	471	[2.000]	2				
6047100	MN2(SO4)3	-14.336	[2.000]	471	[3.000]	732						
4123100	MELANOTHALLI	-18.547	[1.000]	231	[2.000]	180						
5023100	CUCO3	-4.141	[1.000]	231	[1.000]	140						
4223100	CUF2	-16.365	[1.000]	231	[2.000]	270						
4223101	CUF2, 2H2O	-12.436	[1.000]	231	[2.000]	270	[2.000]	2				
2023100	CU(OH)2	-1.166	[-2.000]	330	[1.000]	231	[2.000]	2				
4123101	ATACAMITE	-3.537	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	180								
5123100	CU2(OH)3NO3	-6.168	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	492								
6023100	ANTLERITE	-4.548	[-4.000]	330	[3.000]	231	[4.000]	2				
			[1.000]	732								
6023101	BROCHANTITE	-4.124	[-6.000]	330	[4.000]	231	[6.000]	2				
			[1.000]	732								
6023102	LANGITE	-5.574	[-6.000]	330	[4.000]	231	[7.000]	2				
			[1.000]	732								
2023101	TENORITE	-0.145	[-2.000]	330	[1.000]	231	[1.000]	2				
6023103	CUOCUSO4	-15.262	[-2.000]	330	[2.000]	231	[1.000]	2				
			[1.000]	732								
7023100	CU3(PO4)2	-8.980	[3.000]	231	[2.000]	580						
7023101	CU3(PO4)2,3W	-10.711	[3.000]	231	[2.000]	580	[3.000]	2				
6023104	CUSO4	-14.217	[1.000]	231	[1.000]	732						
6023105	CHALCANTHITE	-8.568	[1.000]	231	[1.000]	732	[5.000]	2				
3023100	CUPRICFERIT	14.709	[-8.000]	330	[1.000]	231	[2.000]	281				
			[4.000]	2								
4195000	ZNCL2	-20.309	[1.000]	950	[2.000]	180						
5095000	SMITHSONITE	-2.233	[1.000]	950	[1.000]	140						
5095001	ZNCO3, 1H2O	-1.974	[1.000]	950	[1.000]	140	[1.000]	2				
4295000	ZNF2	-13.928	[1.000]	950	[2.000]	270						
2095000	ZN(OH)2 (A)	-3.438	[-2.000]	330	[1.000]	950	[2.000]	2				
2095001	ZN(OH)2 (C)	-3.188	[-2.000]	330	[1.000]	950	[2.000]	2				
2095002	ZN(OH)2 (B)	-2.738	[-2.000]	330	[1.000]	950	[2.000]	2				
2095003	ZN(OH)2 (G)	-2.698	[-2.000]	330	[1.000]	950	[2.000]	2				
2095004	ZN(OH)2 (E)	-2.488	[-2.000]	330	[1.000]	950	[2.000]	2				
4195001	ZN2(OH)3CL	-8.321	[-3.000]	330	[2.000]	950	[3.000]	2				
			[1.000]	180								
4195002	ZN5(OH)8CL2	-15.731	[-8.000]	330	[5.000]	950	[8.000]	2				
			[2.000]	180								
6095000	ZN2(OH)2SO4	-8.157	[-2.000]	330	[2.000]	950	[2.000]	2				
			[1.000]	732								
6095001	ZN4(OH)6SO4	-11.033	[-6.000]	330	[4.000]	950	[6.000]	2				
			[1.000]	732								

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5195000	ZNNO3)2,6H2O	-18.182	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-2.298	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-2.128	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-29.346	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-9.178	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-12.679	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-9.100	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-7.906	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-7.711	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	0.278	[1.000] 160 [1.000] 140
4116000	CDCL2	-13.828	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-12.798	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-12.568	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-13.696	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-5.946	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-5.866	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-6.882	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-17.891	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-20.722	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-15.947	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-7.336	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-12.303	[3.000] 160 [2.000] 580
6016003	CDSO4	-10.798	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-9.241	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-9.026	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-11.873	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-8.297	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-12.430	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-2.467	[1.000] 600 [1.000] 140
4260000	PBF2	-11.371	[1.000] 600 [2.000] 270
2060000	MASSICOT	-7.261	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-7.071	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-7.331	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-9.448	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-7.104	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-12.135	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-18.186	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	-0.852	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-11.347	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2
5060002	PB3O2CO3	-15.319	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
7060003	PLUMBGUMMITE	-2.525	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-17.369	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-5.566	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-5.243	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-2.501	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-6.120	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-8.641	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-8.085	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-14.902	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-17.187	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-1.117	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-3.148	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-32.215	[2.000] 61 [-3.000] 2
7060006	PBHPO4	-4.578	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-6.807	[3.000] 600 [2.000] 580
7203000	ALASO4.2W	-8.462	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-9.451	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-9.193	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	-6.602	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7260000	PB3(ASO4)2	-14.370	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-12.130	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-20.008	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-9.887	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-8.880	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-5.508	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	8.979	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-13.870	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	5.186	[-3.000] 330 [1.000] 281 [2.000] 2

9233c40 - Arsenic speciation; no redox, no sorption all As as As(V)

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.096E-04	-3.960	0.000E-01
160	Cd+2	3.890E-05	-4.410	1.200E-05
231	Cu+2	1.585E-02	-1.800	2.600E-03
150	Ca+2	2.512E-03	-2.600	9.980E-03
281	Fe+3	3.020E-02	-1.520	4.200E-06
600	Pb+2	9.120E-08	-7.040	3.800E-07
460	Mg+2	2.512E-03	-2.600	8.300E-03
471	Mn+3	1.288E-02	-1.890	3.600E-03
500	Na+1	8.913E-03	-2.050	8.700E-03
950	Zn+2	2.884E-02	-1.540	4.100E-03
180	Cl-1	7.943E-05	-4.100	1.210E-03
732	SO4-2	1.047E-01	-0.980	3.200E-02
61	H3AsO4	2.089E-03	-2.680	5.400E-08
30	Al+3	7.413E-03	-2.130	1.200E-03
410	K+1	8.913E-06	-5.050	8.600E-04
140	CO3-2	1.000E-08	-8.000	1.000E-08
270	F-1	5.248E-04	-3.280	4.200E-04
492	NO3-1	6.457E-05	-4.190	1.600E-04
580	PO4-3	9.550E-07	-6.020	1.300E-06
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

PO4-3	87.4	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
1.0	PERCENT BOUND IN SPECIES #3305802	H3PO4	
5.7	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +	
5.2	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +	
Cd+2	49.3	PERCENT BOUND IN SPECIES # 160	Cd+2
2.1	PERCENT BOUND IN SPECIES #1601800	CdCl +	
39.2	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ	
9.5	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2	
Cu+2	64.0	PERCENT BOUND IN SPECIES # 231	Cu+2
36.0	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
Ca+2	64.1	PERCENT BOUND IN SPECIES # 150	Ca+2
35.9	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
Fe+3	1.9	PERCENT BOUND IN SPECIES # 281	Fe+3
32.0	PERCENT BOUND IN SPECIES #2813300	FeOH +2	
16.4	PERCENT BOUND IN SPECIES #2817320	FeSO4 +	
45.0	PERCENT BOUND IN SPECIES #2813301	FeOH2 +	
4.1	PERCENT BOUND IN SPECIES #2817321	Fe(SO4)2 -	
Pb+2	36.4	PERCENT BOUND IN SPECIES # 600	Pb+2
56.4	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ	
6.5	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2	
Mg+2	67.1	PERCENT BOUND IN SPECIES # 460	Mg+2
32.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
Mn+3	100.0	PERCENT BOUND IN SPECIES # 471	Mn+3
Na+1	96.2	PERCENT BOUND IN SPECIES # 500	Na+1
3.8	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
Zn+2	56.7	PERCENT BOUND IN SPECIES # 950	Zn+2
36.6	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
6.6	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
Cl-1	99.6	PERCENT BOUND IN SPECIES # 180	Cl-1
SO4-2	67.2	PERCENT BOUND IN SPECIES # 732	SO4-2
8.5	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ	
11.2	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ	
1.0	PERCENT BOUND IN SPECIES #5007320	NaSO4 -	
1.2	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -	
2.9	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ	
4.7	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ	
1.7	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2	
H3AsO4	1.4	PERCENT BOUND IN SPECIES # 61	H3AsO4
98.2	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
Al+3	24.7	PERCENT BOUND IN SPECIES # 30	Al+3

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                28.9     PERCENT BOUND IN SPECIES # 302700   AlF +2
                 3.0     PERCENT BOUND IN SPECIES # 302701   AlF2 +
                26.4     PERCENT BOUND IN SPECIES # 307320   AlSO4 +
                16.3     PERCENT BOUND IN SPECIES # 307321   Al(SO4)2 -

K+1                        94.8     PERCENT BOUND IN SPECIES #    410   K+1
                 5.2     PERCENT BOUND IN SPECIES #4107320   KSO4 -

CO3-2                      99.2     PERCENT BOUND IN SPECIES #3301401   H2CO3 AQ

F-1                        82.5     PERCENT BOUND IN SPECIES # 302700   AlF +2
                17.2     PERCENT BOUND IN SPECIES # 302701   AlF2 +

NO3-1                     100.0     PERCENT BOUND IN SPECIES #    492   NO3-1

H2O                        57.5     PERCENT BOUND IN SPECIES # 303300   AlOH +2
                 3.8     PERCENT BOUND IN SPECIES # 303301   Al(OH)2 +
                10.0     PERCENT BOUND IN SPECIES #2813300   FeOH +2
                28.0     PERCENT BOUND IN SPECIES #2813301   FeOH2 +

H+1                        59.6     PERCENT BOUND IN SPECIES #    330   H+1
                45.0     PERCENT BOUND IN SPECIES #3307320   HSO4 -
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
580	PO4-3	1.300E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	1.200E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	2.600E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	9.980E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	4.200E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	3.800E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	8.300E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
471	Mn+3	3.600E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	8.700E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	4.100E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	1.210E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	3.200E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	5.400E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	1.200E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	8.600E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	1.000E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	4.200E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	1.600E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	1.350E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	2.374E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.401E-02 Sum of ANIONS 4.561E-02

PERCENT DIFFERENCE = 8.433E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 9.959E-02

EQUILIBRIUM pH = 3.960

DATE ID NUMBER: 930127
TIME ID NUMBER: 13303251

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
2003000	ALOH3(A)	-3.023	[1.000]	30	[3.000]	2	[-3.000]	330				
6003000	ALOHSO4	0.560	[-1.000]	330	[1.000]	30	[1.000]	732				
			[1.000]	2								
6003001	AL4(OH)10SO4	-3.298	[-10.000]	330	[4.000]	30	[1.000]	732				
			[10.000]	2								
6041000	ALUM K	-6.774	[1.000]	410	[1.000]	30	[2.000]	732				
			[12.000]	2								
6041001	ALUNITE	4.124	[1.000]	410	[3.000]	30	[2.000]	732				
			[6.000]	2	[-6.000]	330						
6015000	ANHYDRITE	-0.107	[1.000]	150	[1.000]	732						
5015000	ARAGONITE	-11.054	[1.000]	150	[1.000]	140						
5046000	ARTINITE	-23.828	[-2.000]	330	[2.000]	460	[1.000]	140				
			[5.000]	2								
2003001	BOEHMITE	-1.220	[-3.000]	330	[1.000]	30	[2.000]	2				
2046000	BRUCITE	-11.568	[1.000]	460	[2.000]	2	[-2.000]	330				
5015001	CALCITE	-10.915	[1.000]	150	[1.000]	140						
2003002	DIASPORE	0.485	[-3.000]	330	[1.000]	30	[2.000]	2				
5015002	DOLOMITE	-21.840	[1.000]	150	[1.000]	460	[2.000]	140				
6046000	EPSOMITE	-2.668	[1.000]	460	[1.000]	732	[7.000]	2				
2028100	FERRIHYDRITE	-1.095	[-3.000]	330	[1.000]	281	[3.000]	2				
4128100	FEOH)2.7CL.3	4.739	[-2.700]	330	[1.000]	281	[2.700]	2				
			[0.300]	180								
6028100	FE2(SO4)3	-26.071	[2.000]	281	[3.000]	732						
7015003	HYDRAPATITE	-18.083	[5.000]	150	[3.000]	580	[1.000]	2				
			[-1.000]	330								
7015002	FCO3APATITE	-32.659	[9.496]	150	[0.360]	500	[0.144]	460				
			[4.800]	580	[1.200]	140	[2.480]	270				
4215000	FLUORITE	-4.468	[1.000]	150	[2.000]	270						
2003003	GIBBSITE (C)	-1.413	[-3.000]	330	[1.000]	30	[3.000]	2				
3003000	Al2O3	-8.264	[2.000]	30	[3.000]	2	[-6.000]	330				
2028102	GOETHITE	3.297	[-3.000]	330	[1.000]	281	[2.000]	2				
6015001	GYPSUM	0.103	[1.000]	150	[1.000]	732	[2.000]	2				
4150000	HALITE	-6.799	[1.000]	500	[1.000]	180						
3028100	HEMATITE	11.602	[-6.000]	330	[2.000]	281	[3.000]	2				
5015003	HUNTITE	-47.771	[3.000]	460	[1.000]	150	[4.000]	140				
5046001	HYDRMAGNESIT	-63.812	[5.000]	460	[4.000]	140	[-2.000]	330				
			[6.000]	2								
6050000	JAROSITE NA	4.305	[-6.000]	330	[1.000]	500	[3.000]	281				
			[2.000]	732	[6.000]	2						
6041002	JAROSITE K	6.893	[-6.000]	330	[1.000]	410	[3.000]	281				
			[2.000]	732	[6.000]	2						
6028101	JAROSITE H	3.432	[-5.000]	330	[3.000]	281	[2.000]	732				
			[7.000]	2								

ID #	NAME	Sat. Index	Stoichiometry in [brackets]								
3028101	MAGHEMITE	1.208	[-6.000]	330	[2.000]	281	[3.000]	2			
5046002	MAGNESITE	-11.421	[1.000]	460	[1.000]	140					
6050001	MIRABILITE	-5.375	[2.000]	500	[1.000]	732	[10.000]	2			
3050000	NATRON	-19.824	[2.000]	500	[1.000]	140	[10.000]	2			
5046003	NESQUEHONITE	-13.830	[1.000]	460	[1.000]	140	[3.000]	2			
7028100	STRENGITE	0.629	[1.000]	281	[1.000]	580	[2.000]	2			
6050002	THENARDITE	-6.304	[2.000]	500	[1.000]	732					
5050001	THERMONATR	-21.255	[2.000]	500	[1.000]	140	[1.000]	2			
3047100	BIXBYITE	17.496	[-6.000]	330	[2.000]	471	[3.000]	2			
2047100	MANGANITE	8.680	[-3.000]	330	[1.000]	471	[2.000]	2			
6047100	MN2(SO4)3	-7.488	[2.000]	471	[3.000]	732					
4123100	MELANOTHALLI	-13.009	[1.000]	231	[2.000]	180					
5023100	CUCO3	-10.345	[1.000]	231	[1.000]	140					
4223100	CUF2	-15.382	[1.000]	231	[2.000]	270					
4223101	CUF2, 2H2O	-11.453	[1.000]	231	[2.000]	270	[2.000]	2			
2023100	CU(OH)2	-3.942	[-2.000]	330	[1.000]	231	[2.000]	2			
4123101	ATACAMITE	-4.932	[-3.000]	330	[2.000]	231	[3.000]	2			
			[1.000]	180							
5123100	CU2(OH)3NO3	-7.709	[-3.000]	330	[2.000]	231	[3.000]	2			
			[1.000]	492							
6023100	ANTLERITE	-4.222	[-4.000]	330	[3.000]	231	[4.000]	2			
			[1.000]	732							
6023101	BROCHANTITE	-6.574	[-6.000]	330	[4.000]	231	[6.000]	2			
			[1.000]	732							
6023102	LANGITE	-8.024	[-6.000]	330	[4.000]	231	[7.000]	2			
			[1.000]	732							
2023101	TENORITE	-2.921	[-2.000]	330	[1.000]	231	[1.000]	2			
6023103	CUOCUSO4	-12.160	[-2.000]	330	[2.000]	231	[1.000]	2			
			[1.000]	732							
7023100	CU3(PO4)2	-8.187	[3.000]	231	[2.000]	580					
7023101	CU3(PO4)2,3W	-9.918	[3.000]	231	[2.000]	580	[3.000]	2			
6023104	CUSO4	-8.339	[1.000]	231	[1.000]	732					
6023105	CHALCANTHITE	-2.692	[1.000]	231	[1.000]	732	[5.000]	2			
3023100	CUPRICFERIT	6.413	[-8.000]	330	[1.000]	231	[2.000]	281			
			[4.000]	2							
4195000	ZNCL2	-16.163	[1.000]	950	[2.000]	180					
5095000	SMITHSONITE	-9.829	[1.000]	950	[1.000]	140					
5095001	ZNCO3, 1H2O	-9.570	[1.000]	950	[1.000]	140	[1.000]	2			
4295000	ZNF2	-14.336	[1.000]	950	[2.000]	270					
2095000	ZN(OH)2 (A)	-7.606	[-2.000]	330	[1.000]	950	[2.000]	2			
2095001	ZN(OH)2 (C)	-7.356	[-2.000]	330	[1.000]	950	[2.000]	2			
2095002	ZN(OH)2 (B)	-6.906	[-2.000]	330	[1.000]	950	[2.000]	2			
2095003	ZN(OH)2 (G)	-6.866	[-2.000]	330	[1.000]	950	[2.000]	2			
2095004	ZN(OH)2 (E)	-6.656	[-2.000]	330	[1.000]	950	[2.000]	2			
4195001	ZN2(OH)3CL	-12.500	[-3.000]	330	[2.000]	950	[3.000]	2			
			[1.000]	180							
4195002	ZN5(OH)8CL2	-28.256	[-8.000]	330	[5.000]	950	[8.000]	2			
			[2.000]	180							
6095000	ZN2(OH)2SO4	-7.839	[-2.000]	330	[2.000]	950	[2.000]	2			
			[1.000]	732							
6095001	ZN4(OH)6SO4	-19.051	[-6.000]	330	[4.000]	950	[6.000]	2			
			[1.000]	732							

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5195000	ZNNO3)2,6H2O	-14.330	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-6.465	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-6.295	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-24.542	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-12.562	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-8.193	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-4.614	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-3.422	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-3.227	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	-8.684	[1.000] 160 [1.000] 140
4116000	CDCL2	-11.048	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-10.018	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-9.789	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-15.471	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-11.480	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-11.400	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-8.259	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-25.839	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-20.016	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-29.429	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-12.870	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-19.783	[3.000] 160 [2.000] 580
6016003	CDSO4	-7.678	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-6.121	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-5.906	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-8.589	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-7.290	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-17.604	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-10.925	[1.000] 600 [1.000] 140
4260000	PBF2	-12.642	[1.000] 600 [2.000] 270
2060000	MASSICOT	-12.291	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-12.101	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-12.361	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-22.936	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-8.510	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-18.571	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-29.651	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	-8.164	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-22.815	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2
5060002	PB3O2CO3	-33.836	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
7060003	PLUMBGUMMITE	-3.652	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-14.403	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-13.842	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-1.619	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-7.531	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-6.993	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-14.545	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-30.031	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-24.962	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-28.653	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-10.096	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-18.331	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-24.903	[2.000] 61 [-3.000] 2
7060006	PBHPO4	-5.048	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-12.776	[3.000] 600 [2.000] 580
7203000	ALASO4.2W	-6.545	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-24.654	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-10.208	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	-5.706	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7260000	PB3(ASO4)2	-22.146	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-17.321	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-27.513	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-17.392	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-16.286	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-16.392	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	-3.947	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-17.938	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	2.426	[-3.000] 330 [1.000] 281 [2.000] 2

9233t40 - Arsenic speciation; no redox, no sorption, all As as As(V)

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file

INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.698E-04	-3.770	0.000E-01
160	Cd+2	3.890E-05	-4.410	5.100E-06
231	Cu+2	1.585E-02	-1.800	9.500E-04
150	Ca+2	2.512E-03	-2.600	1.000E-02
281	Fe+3	3.020E-02	-1.520	7.600E-06
600	Pb+2	9.120E-08	-7.040	1.300E-08
460	Mg+2	2.512E-03	-2.600	1.200E-02
471	Mn+3	1.288E-02	-1.890	9.100E-04
500	Na+1	8.913E-03	-2.050	2.100E-03
950	Zn+2	2.884E-02	-1.540	1.600E-03
180	Cl-1	7.943E-05	-4.100	4.500E-04
732	SO4-2	1.047E-01	-0.980	3.100E-02
61	H3AsO4	2.089E-03	-2.680	5.400E-08
30	Al+3	7.413E-03	-2.130	3.600E-03
410	K+1	8.913E-06	-5.050	2.600E-04
140	CO3-2	1.000E-08	-8.000	1.000E-08
270	F-1	5.248E-04	-3.280	2.950E-04
492	NO3-1	6.457E-05	-4.190	5.970E-04
580	PO4-3	9.550E-07	-6.020	9.500E-07
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

PO4-3	83.5	PERCENT BOUND IN SPECIES #3305801	H2PO4 -
	1.5	PERCENT BOUND IN SPECIES #3305802	H3PO4
	8.4	PERCENT BOUND IN SPECIES #4605801	MgH2PO4 +
	5.2	PERCENT BOUND IN SPECIES #1505802	CaH2PO4 +
	1.2	PERCENT BOUND IN SPECIES #2815801	FeH2PO4 +2
Cd+2	50.4	PERCENT BOUND IN SPECIES # 160	Cd+2
	40.1	PERCENT BOUND IN SPECIES #1607320	CdSO4 AQ
	8.6	PERCENT BOUND IN SPECIES #1607321	Cd(SO4)2-2
Cu+2	64.0	PERCENT BOUND IN SPECIES # 231	Cu+2
	36.0	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
Ca+2	64.0	PERCENT BOUND IN SPECIES # 150	Ca+2
	36.0	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
Fe+3	2.9	PERCENT BOUND IN SPECIES # 281	Fe+3
	33.2	PERCENT BOUND IN SPECIES #2813300	FeOH +2
	26.0	PERCENT BOUND IN SPECIES #2817320	FeSO4 +
	31.5	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
	6.0	PERCENT BOUND IN SPECIES #2817321	Fe(SO4)2 -
Pb+2	36.8	PERCENT BOUND IN SPECIES # 600	Pb+2
	57.0	PERCENT BOUND IN SPECIES #6007320	PbSO4 AQ
	5.9	PERCENT BOUND IN SPECIES #6007321	Pb(SO4)2-2
Mg+2	67.1	PERCENT BOUND IN SPECIES # 460	Mg+2
	32.9	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
Mn+3	100.0	PERCENT BOUND IN SPECIES # 471	Mn+3
Na+1	96.4	PERCENT BOUND IN SPECIES # 500	Na+1
	3.6	PERCENT BOUND IN SPECIES #5007320	NaSO4 -
Zn+2	57.1	PERCENT BOUND IN SPECIES # 950	Zn+2
	36.9	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
	5.9	PERCENT BOUND IN SPECIES #9507321	Zn(SO4)2-2
Cl-1	99.8	PERCENT BOUND IN SPECIES # 180	Cl-1
SO4-2	61.9	PERCENT BOUND IN SPECIES # 732	SO4-2
	12.7	PERCENT BOUND IN SPECIES #4607320	MgSO4 AQ
	11.6	PERCENT BOUND IN SPECIES #1507320	CaSO4 AQ
	4.3	PERCENT BOUND IN SPECIES # 307320	AlSO4 +
	5.0	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -
	1.1	PERCENT BOUND IN SPECIES #2317320	CuSO4 AQ
	1.9	PERCENT BOUND IN SPECIES #9507320	ZnSO4 AQ
H3AsO4	2.2	PERCENT BOUND IN SPECIES # 61	H3AsO4
	97.6	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
Al+3	32.8	PERCENT BOUND IN SPECIES # 30	Al+3
	7.9	PERCENT BOUND IN SPECIES # 302700	AlF +2

	37.0	PERCENT BOUND IN SPECIES # 307320	AlSO4 +
	21.6	PERCENT BOUND IN SPECIES # 307321	Al(SO4)2 -
K+1		95.1 PERCENT BOUND IN SPECIES # 410	K+1
	4.9	PERCENT BOUND IN SPECIES #4107320	KSO4 -
CO3-2		99.6 PERCENT BOUND IN SPECIES #3301401	H2CO3 AQ
F-1		96.0 PERCENT BOUND IN SPECIES # 302700	AlF +2
	4.0	PERCENT BOUND IN SPECIES # 302701	AlF2 +
NO3-1		100.0 PERCENT BOUND IN SPECIES # 492	NO3-1
H2O		72.1 PERCENT BOUND IN SPECIES # 303300	AlOH +2
	3.2	PERCENT BOUND IN SPECIES # 303301	Al(OH)2 +
	8.5	PERCENT BOUND IN SPECIES #2813300	FeOH +2
	16.1	PERCENT BOUND IN SPECIES #2813301	FeOH2 +
H+1		63.1 PERCENT BOUND IN SPECIES # 330	H+1
	45.0	PERCENT BOUND IN SPECIES #3307320	HSO4 -

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED		SORBED		PRECIPITATED	
		MOL/KG	PERCENT	MOL/KG	PERCENT	MOL/KG	PERCENT
580	PO4-3	9.500E-07	100.0	0.000E-01	0.0	0.000E-01	0.0
160	Cd+2	5.100E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
231	Cu+2	9.500E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
150	Ca+2	1.000E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
281	Fe+3	7.600E-06	100.0	0.000E-01	0.0	0.000E-01	0.0
600	Pb+2	1.300E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
460	Mg+2	1.200E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
471	Mn+3	9.100E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
500	Na+1	2.100E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
950	Zn+2	1.600E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
180	Cl-1	4.500E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
732	SO4-2	3.100E-02	100.0	0.000E-01	0.0	0.000E-01	0.0
61	H3AsO4	5.400E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
30	Al+3	3.600E-03	100.0	0.000E-01	0.0	0.000E-01	0.0
410	K+1	2.600E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
140	CO3-2	1.000E-08	100.0	0.000E-01	0.0	0.000E-01	0.0
270	F-1	2.950E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
492	NO3-1	5.970E-04	100.0	0.000E-01	0.0	0.000E-01	0.0
2	H2O	2.970E-05	100.0	0.000E-01	0.0	0.000E-01	0.0
330	H+1	3.421E-04	100.0	0.000E-01	0.0	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 4.268E-02 Sum of ANIONS 4.066E-02

PERCENT DIFFERENCE = 2.424E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 8.352E-02

EQUILIBRIUM pH = 3.770

DATE ID NUMBER: 930127
TIME ID NUMBER: 13390271

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
2003000	ALOH3(A)	-2.938	[1.000] 30 [3.000] 2 [-3.000] 330
6003000	ALOHSO4	0.999	[-1.000] 330 [1.000] 30 [1.000] 732 [1.000] 2
6003001	AL4(OH)10SO4	-2.604	[-10.000] 330 [4.000] 30 [1.000] 732 [10.000] 2
6041000	ALUM K	-6.681	[1.000] 410 [1.000] 30 [2.000] 732 [12.000] 2
6041001	ALUNITE	4.386	[1.000] 410 [3.000] 30 [2.000] 732 [6.000] 2 [-6.000] 330
6015000	ANHYDRITE	-0.108	[1.000] 150 [1.000] 732
5015000	ARAGONITE	-11.409	[1.000] 150 [1.000] 140
5046000	ARTINITE	-24.219	[-2.000] 330 [2.000] 460 [1.000] 140 [5.000] 2
2003001	BOEHMITE	-1.135	[-3.000] 330 [1.000] 30 [2.000] 2
2046000	BRUCITE	-11.764	[1.000] 460 [2.000] 2 [-2.000] 330
5015001	CALCITE	-11.270	[1.000] 150 [1.000] 140
2003002	DIASPORE	0.570	[-3.000] 330 [1.000] 30 [2.000] 2
5015002	DOLOMITE	-22.391	[1.000] 150 [1.000] 460 [2.000] 140
6046000	EPSOMITE	-2.508	[1.000] 460 [1.000] 732 [7.000] 2
2028100	FERRIHYDRITE	-1.177	[-3.000] 330 [1.000] 281 [3.000] 2
4128100	FEOH)2.7CL.3	4.588	[-2.700] 330 [1.000] 281 [2.700] 2 [0.300] 180
6028100	FE2(SO4)3	-25.170	[2.000] 281 [3.000] 732
7015003	HYDRAPATITE	-19.739	[5.000] 150 [3.000] 580 [1.000] 2 [-1.000] 330
7015002	FCO3APATITE	-37.398	[9.496] 150 [0.360] 500 [0.144] 460 [4.800] 580 [1.200] 140 [2.480] 270
4215000	FLUORITE	-5.880	[1.000] 150 [2.000] 270
2003003	GIBBSITE (C)	-1.328	[-3.000] 330 [1.000] 30 [3.000] 2
3003000	AL2O3	-8.094	[2.000] 30 [3.000] 2 [-6.000] 330
2028102	GOETHITE	3.215	[-3.000] 330 [1.000] 281 [2.000] 2
6015001	GYPSUM	0.102	[1.000] 150 [1.000] 732 [2.000] 2
4150000	HALITE	-7.832	[1.000] 500 [1.000] 180
3028100	HEMATITE	11.438	[-6.000] 330 [2.000] 281 [3.000] 2
5015003	HUNTITE	-48.714	[3.000] 460 [1.000] 150 [4.000] 140
5046001	HYDRMAGNESIT	-64.791	[5.000] 460 [4.000] 140 [-2.000] 330 [6.000] 2
6050000	JAROSITE NA	3.969	[-6.000] 330 [1.000] 500 [3.000] 281 [2.000] 732
6041002	JAROSITE K	6.655	[-6.000] 330 [1.000] 410 [3.000] 281 [2.000] 732 [6.000] 2
6028101	JAROSITE H	3.896	[-5.000] 330 [3.000] 281 [2.000] 732 [7.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]									
3028101	MAGHEMITE	1.044	[-6.000]	330	[2.000]	281	[3.000]	2				
5046002	MAGNESITE	-11.617	[1.000]	460	[1.000]	140						
6050001	MIRABILITE	-6.620	[2.000]	500	[1.000]	732	[10.000]	2				
3050000	NATRON	-21.424	[2.000]	500	[1.000]	140	[10.000]	2				
5046003	NESQUEHONITE	-14.026	[1.000]	460	[1.000]	140	[3.000]	2				
7028100	STRENGITE	0.587	[1.000]	281	[1.000]	580	[2.000]	2				
6050002	THENARDITE	-7.550	[2.000]	500	[1.000]	732						
5050001	THERMONATR	-22.855	[2.000]	500	[1.000]	140	[1.000]	2				
3047100	BIXBYITE	15.270	[-6.000]	330	[2.000]	471	[3.000]	2				
2047100	MANGANITE	7.567	[-3.000]	330	[1.000]	471	[2.000]	2				
6047100	MN2(SO4)3	-8.650	[2.000]	471	[3.000]	732						
4123100	MELANOTHALLI	-14.267	[1.000]	231	[2.000]	180						
5023100	CUCO3	-11.138	[1.000]	231	[1.000]	140						
4223100	CUF2	-17.232	[1.000]	231	[2.000]	270						
4223101	CUF2, 2H2O	-13.303	[1.000]	231	[2.000]	270	[2.000]	2				
2023100	CU(OH)2	-4.735	[-2.000]	330	[1.000]	231	[2.000]	2				
4123101	ATACAMITE	-6.750	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	180								
5123100	CU2(OH)3NO3	-8.527	[-3.000]	330	[2.000]	231	[3.000]	2				
			[1.000]	492								
6023100	ANTLERITE	-6.246	[-4.000]	330	[3.000]	231	[4.000]	2				
			[1.000]	732								
6023101	BROCHANTITE	-9.391	[-6.000]	330	[4.000]	231	[6.000]	2				
			[1.000]	732								
6023102	LANGITE	-10.841	[-6.000]	330	[4.000]	231	[7.000]	2				
			[1.000]	732								
2023101	TENORITE	-3.714	[-2.000]	330	[1.000]	231	[1.000]	2				
6023103	CUOCUSO4	-13.391	[-2.000]	330	[2.000]	231	[1.000]	2				
			[1.000]	732								
7023100	CU3(PO4)2	-10.486	[3.000]	231	[2.000]	580						
7023101	CU3(PO4)2,3W	-12.218	[3.000]	231	[2.000]	580	[3.000]	2				
6023104	CUSO4	-8.777	[1.000]	231	[1.000]	732						
6023105	CHALCANTHITE	-3.130	[1.000]	231	[1.000]	732	[5.000]	2				
3023100	CUPRICFERIT	5.456	[-8.000]	330	[1.000]	231	[2.000]	281				
			[4.000]	2								
4195000	ZNCL2	-17.390	[1.000]	950	[2.000]	180						
5095000	SMITHSONITE	-10.590	[1.000]	950	[1.000]	140						
5095001	ZNCO3, 1H2O	-10.331	[1.000]	950	[1.000]	140	[1.000]	2				
4295000	ZNF2	-16.154	[1.000]	950	[2.000]	270						
2095000	ZN(OH)2 (A)	-8.367	[-2.000]	330	[1.000]	950	[2.000]	2				
2095001	ZN(OH)2 (C)	-8.117	[-2.000]	330	[1.000]	950	[2.000]	2				
2095002	ZN(OH)2 (B)	-7.667	[-2.000]	330	[1.000]	950	[2.000]	2				
2095003	ZN(OH)2 (G)	-7.627	[-2.000]	330	[1.000]	950	[2.000]	2				
2095004	ZN(OH)2 (E)	-7.417	[-2.000]	330	[1.000]	950	[2.000]	2				
4195001	ZN2(OH)3CL	-14.255	[-3.000]	330	[2.000]	950	[3.000]	2				
			[1.000]	180								
4195002	ZN5(OH)8CL2	-32.528	[-8.000]	330	[5.000]	950	[8.000]	2				
			[2.000]	180								
6095000	ZN2(OH)2SO4	-9.007	[-2.000]	330	[2.000]	950	[2.000]	2				
			[1.000]	732								
6095001	ZN4(OH)6SO4	-21.741	[-6.000]	330	[4.000]	950	[6.000]	2				
			[1.000]	732								

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
5195000	ZNNO3)2,6H2O	-13.556	[1.000] 950 [2.000] 492 [6.000] 2
2095005	ZNO(ACTIVE)	-7.227	[-2.000] 330 [1.000] 950 [1.000] 2
2095006	ZINCITE	-7.057	[-2.000] 330 [1.000] 950 [1.000] 2
6095002	ZN3O(SO4)2	-26.116	[-2.000] 330 [3.000] 950 [2.000] 732 [1.000] 2
7095000	ZN3(PO4),4W	-14.765	[3.000] 950 [2.000] 580 [4.000] 2
6095003	ZINCOSITE	-8.600	[1.000] 950 [1.000] 732
6095004	ZNSO4, 1H2O	-5.020	[1.000] 950 [1.000] 732 [1.000] 2
6095005	BIANCHITE	-3.828	[1.000] 950 [1.000] 732 [6.000] 2
6095006	GOSLARITE	-3.633	[1.000] 950 [1.000] 732 [7.000] 2
5016000	OTAVITE	-9.401	[1.000] 160 [1.000] 140
4116000	CDCL2	-12.231	[1.000] 160 [2.000] 180
4116001	CDCL2, 1H2O	-11.201	[1.000] 160 [2.000] 180 [1.000] 2
4116002	CDCL2,2.5H2O	-10.972	[1.000] 160 [2.000] 180 [2.500] 2
4216000	CDF2	-17.245	[1.000] 160 [2.000] 270
2016000	CD(OH)2 (A)	-12.198	[-2.000] 330 [1.000] 160 [2.000] 2
2016001	CD(OH)2 (C)	-12.118	[-2.000] 330 [1.000] 160 [2.000] 2
4116003	CDOHCL	-9.209	[-1.000] 330 [1.000] 160 [1.000] 2 [1.000] 180
6016000	CD3(OH)4SO4	-27.637	[-4.000] 330 [3.000] 160 [4.000] 2 [1.000] 732
6016001	CD3OH2(SO4)2	-21.460	[-2.000] 330 [3.000] 160 [2.000] 2 [2.000] 732
6016002	CD4(OH)6SO4	-31.945	[-6.000] 330 [4.000] 160 [6.000] 2 [1.000] 732
2016002	MONTEPONITE	-13.587	[-2.000] 330 [1.000] 160 [1.000] 2
7016000	CD3(PO4)2	-21.856	[3.000] 160 [2.000] 580
6016003	CDSO4	-8.041	[1.000] 160 [1.000] 732
6016004	CDSO4, 1H2O	-6.484	[1.000] 160 [1.000] 732 [1.000] 2
6016005	CDSO4,2.7H2O	-6.269	[1.000] 160 [1.000] 732 [2.670] 2
4160000	COTUNNITE	-10.872	[1.000] 600 [2.000] 180
4160001	MATLOCKITE	-9.869	[1.000] 600 [1.000] 180 [1.000] 270
4160002	PHOSGENITE	-21.704	[2.000] 600 [2.000] 180 [1.000] 140
5060000	CERRUSITE	-12.742	[1.000] 600 [1.000] 140
4260000	PBF2	-15.516	[1.000] 600 [2.000] 270
2060000	MASSICOT	-14.108	[-2.000] 330 [1.000] 600 [1.000] 2
2060001	LITHARGE	-13.918	[-2.000] 330 [1.000] 600 [1.000] 2
2060002	PBO, .3H2O	-14.179	[-2.000] 330 [1.000] 600 [1.330] 2
5060001	PB2OCO3	-26.571	[-2.000] 330 [2.000] 600 [1.000] 2 [1.000] 140
6060000	LARNAKITE	-11.790	[-2.000] 330 [2.000] 600 [1.000] 732 [1.000] 2
6060001	PB3O2SO4	-23.668	[-4.000] 330 [3.000] 600 [1.000] 732 [2.000] 2
6060002	PB4O3SO4	-36.567	[-6.000] 330 [4.000] 600 [1.000] 732 [3.000] 2
7060001	CLPYROMORPH	-17.364	[5.000] 600 [3.000] 580 [1.000] 180
7060002	HXYPYROMORPH	-31.783	[-1.000] 330 [5.000] 600 [3.000] 580 [1.000] 2
5060002	PB3O2CO3	-39.289	[-4.000] 330 [3.000] 600 [1.000] 140 [2.000] 2

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
7060003	PLUMBGUMMITE	-5.135	[-5.000] 330 [1.000] 600 [3.000] 30 [2.000] 580 [6.000] 2
7060004	HINSDALITE	-15.571	[-6.000] 330 [1.000] 600 [3.000] 30 [1.000] 580 [1.000] 732 [6.000] 2
7060005	TSUMEBITE	-18.230	[-3.000] 330 [2.000] 600 [1.000] 231 [1.000] 580 [6.000] 2
6060003	ANGLESITE	-3.082	[1.000] 600 [1.000] 732
2060004	PB(OH)2 (C)	-9.349	[-2.000] 330 [1.000] 600 [2.000] 2
4160003	LAURIONITE	-9.043	[-1.000] 330 [1.000] 600 [1.000] 180 [1.000] 2
4160004	PB2(OH)3CL	-18.412	[-3.000] 330 [2.000] 600 [3.000] 2 [1.000] 180
5060003	HYDCERRUSITE	-35.484	[-2.000] 330 [3.000] 600 [2.000] 140 [2.000] 2
2060005	PB2O(OH)2	-28.597	[-4.000] 330 [2.000] 600 [3.000] 2
6060004	PB4(OH)6SO4	-35.568	[-6.000] 330 [4.000] 600 [1.000] 732 [6.000] 2
5023101	MALACHITE	-11.683	[2.000] 231 [2.000] 2 [1.000] 140 [-2.000] 330
5023102	AZURITE	-20.711	[3.000] 231 [2.000] 2 [2.000] 140 [-2.000] 330
3006100	AS2O5	-24.517	[2.000] 61 [-3.000] 2
7060006	PBHPO4	-6.826	[1.000] 600 [1.000] 580 [1.000] 330
7060007	PB3(PO4)2	-18.149	[3.000] 600 [2.000] 580
7203000	ALASO4.2W	-6.267	[1.000] 30 [1.000] 61 [2.000] 2 [-3.000] 330
7215000	CA3(ASO4)26W	-25.334	[3.000] 150 [2.000] 61 [4.000] 2 [-6.000] 330
7223100	CU3(ASO4)26W	-12.201	[3.000] 231 [2.000] 61 [2.000] 2 [-6.000] 330
7228100	FEASO4.2W	-5.595	[1.000] 281 [1.000] 61 [2.000] 2 [-3.000] 330
7260000	PB3(ASO4)2	-27.213	[3.000] 600 [2.000] 61 [-6.000] 330
7295000	ZN3ASO422.5W	-19.219	[3.000] 950 [2.000] 61 [2.500] 2 [-6.000] 330
2015000	LIME	-27.868	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-17.747	[-2.000] 330 [1.000] 150 [2.000] 2
2046001	PERICLASE	-16.482	[-2.000] 330 [1.000] 460 [1.000] 2
3046000	SPINEL	-16.419	[-8.000] 330 [1.000] 460 [2.000] 30 [4.000] 2
3046001	MAG-FERRITE	-4.307	[-8.000] 330 [1.000] 460 [2.000] 281 [4.000] 2
4250000	CRYOLITE	-23.424	[1.000] 30 [3.000] 500 [6.000] 270
3028102	LEPIDOCROCIT	2.344	[-3.000] 330 [1.000] 281 [2.000] 2

MINTEQA2 OUTPUT FOR ARSENIC ADSORPTION

USING SYNTHETIC SOLUTION

PART 1 of OUTPUT FILE

PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 26-JAN-93   TIME: 14:27:55

Arsenic sorption pH sweep low site density

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
  in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file
Adsorption model: Constant Capacitance
Number of adsorbing surfaces: 1

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----------- THE INPUT DATA WILL BE USED IN A SERIES OF 5 SWEEPS ------------

The input parameters for each sweep will be identical to this initial listing except that:

-- The fixed equilibrium pH in successive sweeps will be:
   3.00   4.00   5.00   6.00   7.00
-- After the first sweep, the initial component activity guesses for each successive sweep are the equilibrium activities computed at the end of the sweep which precedes it.

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INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.000E-03	-3.000	0.000E-01
61	H3AsO4	1.995E-03	-2.700	2.000E-03
150	Ca+2	2.512E-03	-2.600	2.500E-03
813	ADS1PSIo	1.000E+00	0.000	0.000E-01
811	ADS1TYP1	5.012E-04	-3.300	5.000E-04
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	9.3	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	90.3	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
H3AsO4	10.7	PERCENT BOUND IN SPECIES # 61	H3AsO4
	66.6	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	22.6	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
Ca+2	100.0	PERCENT BOUND IN SPECIES # 150	Ca+2
ADS1PSIo	103.1	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
H2O	99.6	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
H+1	664.5	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.547E-03	77.3	4.534E-04	22.7	0.000E-01	0.0
150	Ca+2	2.500E-03	100.0	2.088E-07	0.0	0.000E-01	0.0
2	H2O	1.142E-11	0.0	-4.534E-04	100.0	0.000E-01	0.0
330	H+1	-2.450E-04	122.2	4.455E-05	-22.2	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 6.134E-03 Sum of ANIONS 1.335E-03

PERCENT DIFFERENCE = 6.426E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 6.210E-03

EQUILIBRIUM pH = 3.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.016434 sig0 = 0.018078
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 4.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14281095

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-14.037	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)26W	-19.883	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-29.545	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-19.423	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  2 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    4.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	9.0	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	87.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	3.0	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H3AsO4	1.2	PERCENT BOUND IN SPECIES # 61	H3AsO4
	76.0	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	21.9	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
Ca+2	99.9	PERCENT BOUND IN SPECIES # 150	Ca+2
ADS1PSIo	129.4	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	13.6	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
H2O	96.7	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	3.3	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H+1	109.5	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	1.1	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.548E-03	77.4	4.523E-04	22.6	0.000E-01	0.0
150	Ca+2	2.498E-03	99.9	2.372E-06	0.1	0.000E-01	0.0
2	H2O	1.139E-10	0.0	-4.523E-04	100.0	0.000E-01	0.0
330	H+1	-1.418E-03	102.2	3.021E-05	-2.2	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.154E-03 Sum of ANIONS 1.542E-03

PERCENT DIFFERENCE = 5.395E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.816E-03

EQUILIBRIUM pH = 4.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.012774 sig0 = 0.014052
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 4.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14281540

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-15.920	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)2.6W	-15.755	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-27.541	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-17.419	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  3 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:     5.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	9.0	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	6.1	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
	67.2	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	17.7	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H3AsO4	1.7	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
	76.9	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	16.8	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	4.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
Ca+2	98.8	PERCENT BOUND IN SPECIES # 150	Ca+2
	1.2	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
ADS1PSIo	275.7	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	373.3	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
H2O	79.1	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	20.8	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H+1	4.2	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
	93.8	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	5.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.575E-03	78.8	4.246E-04	21.2	0.000E-01	0.0
150	Ca+2	2.470E-03	98.8	3.032E-05	1.2	0.000E-01	0.0
2	H2O	1.139E-09	0.0	-4.246E-04	100.0	0.000E-01	0.0
330	H+1	-1.596E-03	97.3	-4.440E-05	2.7	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.056E-03 Sum of ANIONS 1.696E-03

PERCENT DIFFERENCE = 4.975E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.783E-03

EQUILIBRIUM pH = 5.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.005937 sig0 = 0.006530
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 4.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14281968

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-17.909	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)26W	-11.757	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-25.546	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-15.424	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  4 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    6.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	3.7	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
3.6	PERCENT BOUND IN SPECIES #8113302	=SO1H2+	
27.3	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
19.9	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)	
44.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
H3AsO4	15.1	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
67.6	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
5.0	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)	
11.1	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
Ca+2	94.5	PERCENT BOUND IN SPECIES # 150	Ca+2
5.5	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
ADS1PSIo	401.6	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
>1000.	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
H2O	5.3	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
28.9	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)	
64.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
1.4	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H+1	2.5	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
27.2	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2	
60.8	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
10.0	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.655E-03	82.8	3.447E-04	17.2	0.000E-01	0.0
150	Ca+2	2.364E-03	94.5	1.364E-04	5.5	0.000E-01	0.0
2	H2O	1.138E-08	0.0	-3.447E-04	100.0	0.000E-01	0.0
330	H+1	-1.957E-03	87.9	-2.684E-04	12.1	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.019E-03 Sum of ANIONS 2.244E-03

PERCENT DIFFERENCE = 3.820E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 6.009E-03

EQUILIBRIUM pH = 6.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.001630 sig0 = 0.001793
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 4.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14282391

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-20.023	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)2:6W	-7.936	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-23.568	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-13.446	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  5 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    7.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	33.6	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
	53.8	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
	9.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
	1.4	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2
H3AsO4	8.4	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
	61.6	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
	27.0	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	2.5	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
Ca+2	89.2	PERCENT BOUND IN SPECIES # 150	Ca+2
	10.8	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
ADS1PSIo	>1000.	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
	185.2	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
	51.7	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2
H2O	73.7	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
	1.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	21.8	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
	3.0	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2
H+1	14.1	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
	69.1	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
	15.1	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	1.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.772E-03	88.6	2.279E-04	11.4	0.000E-01	0.0
150	Ca+2	2.231E-03	89.2	2.688E-04	10.8	0.000E-01	0.0
2	H2O	1.142E-07	-0.1	-2.279E-04	100.1	0.000E-01	0.0
330	H+1	-3.005E-03	84.2	-5.644E-04	15.8	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.003E-03 Sum of ANIONS 3.572E-03

PERCENT DIFFERENCE = 1.668E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 7.198E-03

EQUILIBRIUM pH = 7.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = -.009798 sig0 = -.010778
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 4.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14282830

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
3006100	AS2O5	-22.828	[2.000]	61	[-3.000]	2				
7215000	CA3(ASO4)26W	-4.852	[3.000]	150	[2.000]	61	[4.000]	2		
			[-6.000]	330						
2015000	LIME	-21.605	[-2.000]	330	[1.000]	150	[1.000]	2		
2015001	PORTLANDITE	-11.483	[-2.000]	330	[1.000]	150	[2.000]	2		

PART 1 of OUTPUT FILE

PC MINTEQA2 v3.10 DATE OF CALCULATIONS: 26-JAN-93 TIME: 14:36:43

Arsenic sorption ph sweep medium site density 10 g/l

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
  in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file
Adsorption model: Constant Capacitance
Number of adsorbing surfaces: 1

!!

----------- THE INPUT DATA WILL BE USED IN A SERIES OF 5 SWEEPS ------------

The input parameters for each sweep will be identical to this initial listing except that:

-- The fixed equilibrium pH in successive sweeps will be:
   3.00 4.00 5.00 6.00 7.00

-- After the first sweep, the initial component activity guesses for each successive sweep are the equilibrium activities computed at the end of the sweep which precedes it.

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INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.000E-03	-3.000	0.000E-01
61	H3AsO4	1.995E-03	-2.700	2.000E-03
150	Ca+2	2.512E-03	-2.600	2.500E-03
813	ADS1PSIo	1.000E+00	0.000	0.000E-01
811	ADS1TYP1	5.012E-04	-3.300	1.250E-03
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	12.3	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	87.2	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
H3AsO4	6.3	PERCENT BOUND IN SPECIES # 61	H3AsO4
	39.0	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	54.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
Ca+2	100.0	PERCENT BOUND IN SPECIES # 150	Ca+2
ADS1PSIo	102.8	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
H2O	99.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
H+1	238.6	PERCENT BOUND IN SPECIES # 330	H+1
	33.9	PERCENT BOUND IN SPECIES #8113302	=SO1H2+

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	9.047E-04	45.2	1.095E-03	54.8	0.000E-01	0.0
150	Ca+2	2.499E-03	100.0	5.650E-07	0.0	0.000E-01	0.0
2	H2O	1.140E-11	0.0	-1.095E-03	100.0	0.000E-01	0.0
330	H+1	3.064E-04	67.3	1.488E-04	32.7	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 6.240E-03 Sum of ANIONS 7.849E-04

PERCENT DIFFERENCE = 7.765E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.932E-03

EQUILIBRIUM pH = 3.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.021921 sig0 = 0.024113
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 10.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14365867

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
3006100	AS2O5	-14.501	[2.000] 61 [-3.000] 2
7215000	CA3(ASO4)2:6W	-20.339	[3.000] 150 [2.000] 61 [4.000] 2
			[-6.000] 330
2015000	LIME	-29.542	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-19.420	[-2.000] 330 [1.000] 150 [2.000] 2

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*** This is the beginning of SWEEP NUMBER  2 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    4.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	12.1	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	83.8	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	3.5	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H3AsO4	44.6	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	52.4	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	2.2	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
Ca+2	99.7	PERCENT BOUND IN SPECIES # 150	Ca+2
ADS1PSIo	125.1	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	10.9	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
H2O	96.0	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	4.0	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H+1	131.3	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	6.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	9.086E-04	45.4	1.091E-03	54.6	0.000E-01	0.0
150	Ca+2	2.493E-03	99.7	6.607E-06	0.3	0.000E-01	0.0
2	H2O	1.137E-10	0.0	-1.091E-03	100.0	0.000E-01	0.0
330	H+1	-7.879E-04	115.9	1.081E-04	-15.9	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.260E-03 Sum of ANIONS 9.399E-04

PERCENT DIFFERENCE = 6.968E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.491E-03

EQUILIBRIUM pH = 4.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.017741 sig0 = 0.019515
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 10.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14370318

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-16.381	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)2OH	-16.207	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-27.539	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-17.417	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  3 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    5.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	11.5	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	6.6	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
	62.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	19.2	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H3AsO4	1.1	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
	47.8	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	39.1	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	12.0	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
Ca+2	96.7	PERCENT BOUND IN SPECIES # 150	Ca+2
	3.3	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
ADS1PSIo	213.6	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	246.0	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
H2O	76.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	23.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H+1	3.9	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
	88.0	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
	22.1	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3Aso4	9.777E-04	48.9	1.022E-03	51.1	0.000E-01	0.0
150	Ca+2	2.417E-03	96.7	8.280E-05	3.3	0.000E-01	0.0
2	H2O	1.135E-09	0.0	-1.022E-03	100.0	0.000E-01	0.0
330	H+1	-9.864E-04	90.9	-9.828E-05	9.1	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.155E-03 Sum of ANIONS 1.239E-03

PERCENT DIFFERENCE = 6.123E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.360E-03

EQUILIBRIUM pH = 5.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.009841 sig0 = 0.010825
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 10.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14370763

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-18.321	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)26W	-12.183	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-25.550	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-15.429	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  4 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    6.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	4.2	PERCENT BOUND IN SPECIES #8110613 =S1OAsO4-3
4.3	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
28.1	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
18.2	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
43.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
1.0	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2
H3AsO4	2.6	PERCENT BOUND IN SPECIES #8110613 =S1OAsO4-3
10.5	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
47.5	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
11.4	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
27.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
Ca+2	85.9	PERCENT BOUND IN SPECIES # 150 Ca+2
14.1	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
ADS1PSIo	216.7	PERCENT BOUND IN SPECIES #8113302 =SO1H2+
>1000.	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
H2O	6.3	PERCENT BOUND IN SPECIES #8110613 =S1OAsO4-3
27.1	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
65.1	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
1.5	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2
H+1	7.7	PERCENT BOUND IN SPECIES #8110613 =S1OAsO4-3
20.5	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2
46.4	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -
26.8	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
1.3	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.158E-03	57.9	8.416E-04	42.1	0.000E-01	0.0
150	Ca+2	2.148E-03	85.9	3.515E-04	14.1	0.000E-01	0.0
2	H2O	1.129E-08	0.0	-8.416E-04	100.0	0.000E-01	0.0
330	H+1	-1.366E-03	66.8	-6.783E-04	33.2	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.055E-03 Sum of ANIONS 2.099E-03

PERCENT DIFFERENCE = 4.131E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.190E-03

EQUILIBRIUM pH = 6.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.003622 sig0 = 0.003985
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 10.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14371191

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
3006100	AS2O5	-20.326	[2.000]	61	[-3.000]	2				
7215000	CA3(ASO4)26W	-8.335	[3.000]	150	[2.000]	61	[4.000]	2		
			[-6.000]	330						
2015000	LIME	-23.600	[-2.000]	330	[1.000]	150	[1.000]	2		
2015001	PORTLANDITE	-13.478	[-2.000]	330	[1.000]	150	[2.000]	2		

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!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
*** This is the beginning of SWEEP NUMBER  5 in the series of  5 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    7.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	33.6	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
53.7	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
9.8	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
1.4	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H3AsO4	21.0	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
49.4	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2	
22.1	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
6.2	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
Ca+2	73.1	PERCENT BOUND IN SPECIES # 150	Ca+2
26.9	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
ADS1PSIo	>1000.	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
185.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
52.1	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H2O	73.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
1.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)	
21.7	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
3.0	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H+1	32.9	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
51.6	PERCENT BOUND IN SPECIES #3300612	HAsO4 -2	
11.6	PERCENT BOUND IN SPECIES #3300611	H2AsO4 -	
3.2	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.431E-03	71.6	5.686E-04	28.4	0.000E-01	0.0
150	Ca+2	1.828E-03	73.1	6.715E-04	26.9	0.000E-01	0.0
2	H2O	1.126E-07	0.0	-5.686E-04	100.0	0.000E-01	0.0
330	H+1	-2.420E-03	63.2	-1.409E-03	36.8	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.007E-03 Sum of ANIONS 3.837E-03

PERCENT DIFFERENCE = 1.324E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.856E-03

EQUILIBRIUM pH = 7.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = -.009680 sig0 = -.010647
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 10.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930126
TIME ID NUMBER: 14371625

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]
3006100	AS2O5	-22.992	[2.000] 61 [-3.000] 2
7215000	CA3(ASO4)26W	-5.234	[3.000] 150 [2.000] 61 [4.000] 2
			[-6.000] 330
2015000	LIME	-21.677	[-2.000] 330 [1.000] 150 [1.000] 2
2015001	PORTLANDITE	-11.555	[-2.000] 330 [1.000] 150 [2.000] 2

PART 1 of OUTPUT FILE

PC MINTEQA2 v3.10   DATE OF CALCULATIONS: 2-MAR-93 TIME: 14:48:36

Arsenic sorption ph sweep high site density 50 g/l

Temperature (Celsius): 25.00
Units of concentration: MOLAL
Ionic strength to be computed.
If specified, carbonate concentration represents total inorganic carbon.
Do not automatically terminate if charge imbalance exceeds 30%
Precipitation is allowed only for those solids specified as ALLOWED
  in the input file (if any).
The maximum number of iterations is: 40
The method used to compute activity coefficients is: Davies equation
Full output file
Adsorption model: Constant Capacitance
Number of adsorbing surfaces: 1

!!

----------- THE INPUT DATA WILL BE USED IN A SERIES OF 8 SWEEPS ------------

The input parameters for each sweep will be identical to this initial listing except that:

-- The fixed equilibrium pH in successive sweeps will be:
   3.00 4.00 5.00 6.00 7.00 8.00
   9.00 10.00

-- After the first sweep, the initial component activity guesses for each successive sweep are the equilibrium activities computed at the end of the sweep which precedes it.

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INPUT DATA BEFORE TYPE MODIFICATIONS

ID	NAME	ACTIVITY GUESS	LOG GUESS	ANAL TOTAL
330	H+1	1.000E-03	-3.000	0.000E-01
61	H3AsO4	1.995E-03	-2.700	2.000E-03
150	Ca+2	2.512E-03	-2.600	2.500E-03
813	ADS1PSIo	1.000E+00	0.000	0.000E-01
811	ADS1TYP1	5.012E-04	-3.300	6.250E-03
2	H2O	1.000E+00	0.000	0.000E-01

PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	67.7	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	27.1	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	4.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H3AsO4	84.5	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	15.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
Ca+2	100.0	PERCENT BOUND IN SPECIES # 150	Ca+2
ADS1PSIo	107.8	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
H2O	84.6	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	15.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H+1	21.6	PERCENT BOUND IN SPECIES # 330	H+1
	84.6	PERCENT BOUND IN SPECIES #8113302	=SO1H2+

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.376E-06	0.1	1.999E-03	99.9	0.000E-01	0.0
150	Ca+2	2.500E-03	100.0	4.228E-07	0.0	0.000E-01	0.0
2	H2O	1.138E-11	0.0	-1.999E-03	100.0	0.000E-01	0.0
330	H+1	1.082E-03	21.6	3.923E-03	78.4	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 1.032E-02 Sum of ANIONS 3.101E-04

PERCENT DIFFERENCE = 9.416E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.541E-03

EQUILIBRIUM pH = 3.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.114733 sig0 = 0.126206
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14485243

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-20.135	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)2:6W	-25.959	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-29.538	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-19.416	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  2 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    4.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	1.4	PERCENT BOUND IN SPECIES # 811	ADS1TYP1
	66.5	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
	17.3	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	14.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H3AsO4	54.2	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	44.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
Ca+2	99.6	PERCENT BOUND IN SPECIES # 150	Ca+2
ADS1PSIo	128.6	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
H2O	54.2	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)
	44.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-
H+1	3.3	PERCENT BOUND IN SPECIES # 330	H+1
	125.2	PERCENT BOUND IN SPECIES #8113302	=SO1H2+

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.721E-06	0.1	1.998E-03	99.9	0.000E-01	0.0
150	Ca+2	2.491E-03	99.6	9.205E-06	0.4	0.000E-01	0.0
2	H2O	1.134E-10	0.0	-1.998E-03	100.0	0.000E-01	0.0
330	H+1	1.063E-04	3.2	3.215E-03	96.8	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 9.266E-03 Sum of ANIONS 9.444E-04

PERCENT DIFFERENCE = 8.150E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.036E-03

EQUILIBRIUM pH = 4.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.094547 sig0 = 0.104002
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14485693

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-21.824	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)2.6W	-21.635	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-27.534	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-17.412	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  3 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    5.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

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ADS1TYP1                  4.2     PERCENT BOUND IN SPECIES #     811   ADS1TYP1
      2.8     PERCENT BOUND IN SPECIES #8110613   =S1OAsO4-3
     60.2     PERCENT BOUND IN SPECIES #8113302   =SO1H2+
      3.6     PERCENT BOUND IN SPECIES #8111500   =SO1HCa++
      7.4     PERCENT BOUND IN SPECIES #8110610   =S1H2AsO4(o)
     21.1     PERCENT BOUND IN SPECIES #8110611   =S1HAsO4-

H3AsO4                    8.8     PERCENT BOUND IN SPECIES #8110613   =S1OAsO4-3
     23.2     PERCENT BOUND IN SPECIES #8110610   =S1H2AsO4(o)
     66.0     PERCENT BOUND IN SPECIES #8110611   =S1HAsO4-
      1.8     PERCENT BOUND IN SPECIES #8110612   =S1AsO4-2

Ca+2                     91.0     PERCENT BOUND IN SPECIES #     150   Ca+2
      9.0     PERCENT BOUND IN SPECIES #8111500   =SO1HCa++

ADS1PSIo                164.2     PERCENT BOUND IN SPECIES #8113302   =SO1H2+
     19.6     PERCENT BOUND IN SPECIES #8111500   =SO1HCa++

H2O                       8.8     PERCENT BOUND IN SPECIES #8110613   =S1OAsO4-3
     23.3     PERCENT BOUND IN SPECIES #8110610   =S1H2AsO4(o)
     66.1     PERCENT BOUND IN SPECIES #8110611   =S1HAsO4-
      1.8     PERCENT BOUND IN SPECIES #8110612   =S1AsO4-2

H+1                     203.5     PERCENT BOUND IN SPECIES #8113302   =SO1H2+
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---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	2.385E-06	0.1	1.998E-03	99.9	0.000E-01	0.0
150	Ca+2	2.275E-03	91.0	2.252E-04	9.0	0.000E-01	0.0
2	H2O	1.127E-09	0.0	-1.998E-03	100.0	0.000E-01	0.0
330	H+1	8.326E-06	0.4	1.842E-03	99.6	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 8.775E-03 Sum of ANIONS 1.925E-03

PERCENT DIFFERENCE = 6.402E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 4.556E-03

EQUILIBRIUM pH = 5.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.067027 sig0 = 0.073730
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14490149

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
3006100	AS2O5	-23.542	[2.000]	61	[-3.000]	2				
7215000	CA3(ASO4)26W	-17.453	[3.000]	150	[2.000]	61	[4.000]	2		
			[-6.000]	330						
2015000	LIME	-25.567	[-2.000]	330	[1.000]	150	[1.000]	2		
2015001	PORTLANDITE	-15.445	[-2.000]	330	[1.000]	150	[2.000]	2		

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*** This is the beginning of SWEEP NUMBER  4 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    6.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	7.6	PERCENT BOUND IN SPECIES # 811	ADS1TYP1
17.1	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3	
34.0	PERCENT BOUND IN SPECIES #8113302	=SO1H2+	
26.4	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
1.4	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)	
12.4	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
1.1	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H3AsO4	53.5	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
4.2	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)	
38.7	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
3.5	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
Ca+2	34.1	PERCENT BOUND IN SPECIES # 150	Ca+2
65.9	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
ADS1PSIo	164.0	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
254.3	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
H2O	53.6	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
4.2	PERCENT BOUND IN SPECIES #8110610	=S1H2AsO4(o)	
38.7	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
3.5	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H+1	160.4	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
38.6	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
6.9	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	2.727E-06	0.1	1.997E-03	99.9	0.000E-01	0.0
150	Ca+2	8.519E-04	34.1	1.648E-03	65.9	0.000E-01	0.0
2	H2O	1.071E-08	0.0	-1.997E-03	100.0	0.000E-01	0.0
330	H+1	-2.146E-06	0.1	-2.000E-03	99.9	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 7.126E-03 Sum of ANIONS 4.129E-03

PERCENT DIFFERENCE = 2.664E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.707E-03

EQUILIBRIUM pH = 6.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.037902 sig0 = 0.041693
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14490616

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-25.540	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)26W	-14.591	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-23.947	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-13.825	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  5 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    7.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	11.8	PERCENT BOUND IN SPECIES # 811	ADS1TYP1
29.1	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3	
17.1	PERCENT BOUND IN SPECIES #8113302	=SO1H2+	
38.9	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
2.2	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
H3AsO4	90.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
6.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
1.9	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
Ca+2	2.7	PERCENT BOUND IN SPECIES # 150	Ca+2
97.3	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
ADS1PSIo	410.9	PERCENT BOUND IN SPECIES #8113302	=SO1H2+
>1000.	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
H2O	90.9	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
6.9	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
1.9	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H+1	118.2	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
3.0	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
1.7	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	2.332E-06	0.1	1.998E-03	99.9	0.000E-01	0.0
150	Ca+2	6.747E-05	2.7	2.433E-03	97.3	0.000E-01	0.0
2	H2O	1.020E-07	0.0	-1.998E-03	100.0	0.000E-01	0.0
330	H+1	-3.838E-06	0.1	-4.605E-03	99.9	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 6.070E-03 Sum of ANIONS 5.679E-03

PERCENT DIFFERENCE = 3.332E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.385E-04

EQUILIBRIUM pH = 7.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = 0.007615 sig0 = 0.008376
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14491105

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-28.389	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)26W	-14.574	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-22.992	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-12.870	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  6 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:     8.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	19.5	PERCENT BOUND IN SPECIES # 811	ADS1TYP1
31.6	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3	
1.2	PERCENT BOUND IN SPECIES #8113301	=SO1-	
7.4	PERCENT BOUND IN SPECIES #8113302	=SO1H2+	
39.9	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
H3AsO4	98.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
Ca+2	99.8	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
ADS1PSIo	>1000.	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
12.6	PERCENT BOUND IN SPECIES #8113301	=SO1-	
1.8	PERCENT BOUND IN SPECIES #8110611	=S1HAsO4-	
3.7	PERCENT BOUND IN SPECIES #8110612	=S1AsO4-2	
H2O	99.0	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
H+1	106.3	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
1.3	PERCENT BOUND IN SPECIES #8113301	=SO1-	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.811E-06	0.1	1.998E-03	99.9	0.000E-01	0.0
150	Ca+2	5.889E-06	0.2	2.494E-03	99.8	0.000E-01	0.0
2	H2O	1.009E-06	-0.1	-1.998E-03	100.1	0.000E-01	0.0
330	H+1	-4.524E-06	0.1	-5.573E-03	99.9	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.463E-03 Sum of ANIONS 6.041E-03

PERCENT DIFFERENCE = 5.022E+00 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.576E-05

EQUILIBRIUM pH = 8.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = -.017105 sig0 = -.018816
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14491572

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]						
3006100	AS2O5	-32.245	[2.000]	61	[-3.000]	2			
7215000	CA3(ASO4)26W	-15.561	[3.000]	150	[2.000]	61	[4.000]	2	
			[-6.000]	330					
2015000	LIME	-22.035	[-2.000]	330	[1.000]	150	[1.000]	2	
2015001	PORTLANDITE	-11.913	[-2.000]	330	[1.000]	150	[2.000]	2	

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*** This is the beginning of SWEEP NUMBER  7 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:    9.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	20.6	PERCENT BOUND IN SPECIES # 811	ADS1TYP1
31.9	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3	
5.8	PERCENT BOUND IN SPECIES #8113301	=SO1-	
1.7	PERCENT BOUND IN SPECIES #8113302	=SO1H2+	
40.0	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
H3AsO4	99.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
Ca+2	100.0	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
ADS1PSIo	477.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
29.0	PERCENT BOUND IN SPECIES #8113301	=SO1-	
H2O	100.4	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
H+1	95.6	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
5.8	PERCENT BOUND IN SPECIES #8113301	=SO1-	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	1.614E-06	0.1	1.998E-03	99.9	0.000E-01	0.0
150	Ca+2	1.221E-06	0.0	2.499E-03	100.0	0.000E-01	0.0
2	H2O	1.008E-05	-0.5	-1.998E-03	100.5	0.000E-01	0.0
330	H+1	-1.331E-05	0.2	-6.251E-03	99.8	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.104E-03 Sum of ANIONS 6.368E-03

PERCENT DIFFERENCE = 1.102E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 1.071E-05

EQUILIBRIUM pH = 9.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = -.036634 sig0 = -.040297
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14492028

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
3006100	AS2O5	-36.301	[2.000]	61	[-3.000]	2				
7215000	CA3(ASO4)26W	-15.662	[3.000]	150	[2.000]	61	[4.000]	2		
			[-6.000]	330						
2015000	LIME	-20.717	[-2.000]	330	[1.000]	150	[1.000]	2		
2015001	PORTLANDITE	-10.595	[-2.000]	330	[1.000]	150	[2.000]	2		

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*** This is the beginning of SWEEP NUMBER  8 in the series of  8 ***
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The input for this sweep is identical to the initial sweep except:
  1)  The fixed pH is:   10.00
  2)  The log activity guesses for all components are as computed at
      the point of FIRST convergence in the previous problem.

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PERCENTAGE DISTRIBUTION OF COMPONENTS AMONG
TYPE I and TYPE II (dissolved and adsorbed) species

ADS1TYP1	12.2	PERCENT BOUND IN SPECIES # 811	ADS1TYP1
31.9	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3	
15.6	PERCENT BOUND IN SPECIES #8113301	=SO1-	
40.0	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++	
H3AsO4	99.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
Ca+2	100.0	PERCENT BOUND IN SPECIES #8111500	=SO1HCa++
ADS1PSIo	306.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
49.9	PERCENT BOUND IN SPECIES #8113301	=SO1-	
H2O	105.3	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
H+1	84.8	PERCENT BOUND IN SPECIES #8110613	=S1OAsO4-3
1.4	PERCENT BOUND IN SPECIES #3300020	OH-	
13.8	PERCENT BOUND IN SPECIES #8113301	=SO1-	

---------- EQUILIBRATED MASS DISTRIBUTION ----------

IDX	NAME	DISSOLVED MOL/KG	DISSOLVED PERCENT	SORBED MOL/KG	SORBED PERCENT	PRECIPITATED MOL/KG	PRECIPITATED PERCENT
61	H3AsO4	3.069E-06	0.2	1.997E-03	99.8	0.000E-01	0.0
150	Ca+2	4.276E-07	0.0	2.500E-03	100.0	0.000E-01	0.0
2	H2O	1.013E-04	-5.3	-1.997E-03	105.3	0.000E-01	0.0
330	H+1	-1.076E-04	1.5	-6.951E-03	98.5	0.000E-01	0.0

Charge Balance: SPECIATED

Sum of CATIONS = 5.014E-03 Sum of ANIONS 7.073E-03

PERCENT DIFFERENCE = 1.703E+01 (ANIONS - CATIONS)/(ANIONS + CATIONS)

EQUILIBRIUM IONIC STRENGTH (m) = 5.786E-05

EQUILIBRIUM pH = 10.000

**** CONSTANT CAPACITANCE ADSORPTION MODEL ****

**** Parameters For Adsorbent Number 1 ****
Electrostatic Variables: psi0 = -.057075 sig0 = -.062782
psib = 0.000000 sigb = 0.000000
psid = 0.000000 sigd = 0.000000
Adsorbent Concentration (g/l): 50.000
Specific Surface Area (sq. meters/g): 60.00

DATE ID NUMBER: 930302
TIME ID NUMBER: 14492495

Saturation indices and stoichiometry of all minerals

ID #	NAME	Sat. Index	Stoichiometry in [brackets]							
3006100	AS2O5	-39.777	[2.000]	61	[-3.000]	2				
7215000	CA3(ASO4)26W	-14.535	[3.000]	150	[2.000]	61	[4.000]	2		
			[-6.000]	330						
2015000	LIME	-19.182	[-2.000]	330	[1.000]	150	[1.000]	2		
2015001	PORTLANDITE	-9.060	[-2.000]	330	[1.000]	150	[2.000]	2		

MINTEQA2 BOUNDARY CONDITIONS FOR

INCREMENTAL LIME ADDITION TO SATURATED PASTE

Table E-3.4. Summary of MINTEQA2 model run boundary conditions for incremental $CaCO_3$ addition to saturated paste.

SITE	TREATMENT	DEPTH	DATE	EXCLUDED SOLIDS
MINTEQA2 MODEL BOUNDARY CONDITIONS All runs performed at 25 degrees C Values of pCO_2 fixed at 0.003 atm Davies equation used to compute activity coefficients Precipitation of solid phases permitted[1]				
21 - Ramsay	Control	0 - 8 inches	1990	lepidocrocite, cuprite, cupric ferrite, cuprous ferrite, hematite, magnetite, goethite, Al_2O_3, gibbsite, $Fe(OH)_{2.7}Cl_{.3}$, diaspore, $Al(OH)_3$, Zn metal and Cu metal

Note: Due to the extremely large volume, output from this modeling is not included in the appendices. Output data is summarized in Table 5.3.7.